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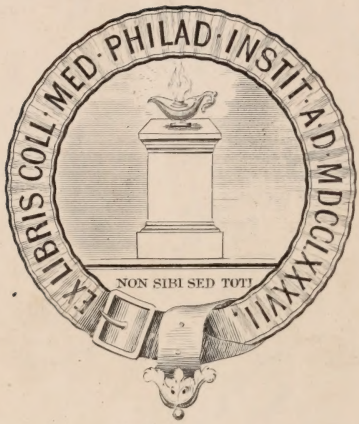

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ORIGINAL COMMUNICATIONS.

ARTICLE I.

PHYSICAL CONDITIONS ESSENTIAL TO THE PRODUCTION OF TYMPANITIC RESONANCE, AND PATHOLOGICAL STATES OF PULMONARY TISSUES IN WHICH IT OCCURS. *By* R. H. BABCOCK, M.D., *Chicago.*

That deviation from the normal vesicular percussion note of healthy lung tissue, known as tympanitic resonance, is so significant a diagnostic sign, that I trust a few remarks upon the physical laws and pathological conditions favoring its development may not be out of place. Percussion derives its diagnostic import from the law of physics, that bodies, when struck, emit a sound whose quality, intensity, pitch, and duration are in accordance with the composition and molecular arrangement of the body struck. The quality of this sound is said to be sonorous or non-sonorous, according as the body emitting it does or does not contain air. The conditions of the human organism are such that, in percussing over its various internal viscera, we can only discriminate a difference in sound with relation to the presence or absence of air in the organs. Hence

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the percussion note is either resonant or non-resonant, clear or dull. Yet it is highly probable that were the human ear sufficiently delicate in its sense-perception, it would be able to detect differences in the quality of the sounds emitted by the various viscera that are devoid of air; this difference in the quality of the sounds being dependent upon variations in the structure of the vibrating organs. Thus, the liver would give forth a sound of different quality from the spleen, that of the heart, again, differing from either of these. As it is, we only recognize a common character in the percussion note of these and other solid or airless viscera, viz., flatness.

But when we come to percuss over those which contain air within their walls, the stomach intestines, and respiratory organs, we are struck with the fact that the sound elicited is not always the same. The healthy lung tissue gives forth a tone peculiar to itself; and this "vesicular sound," as it is called, is very unlike the sound produced by striking the larynx, trachea, stomach, or bowels. The sound of these, in turn, differs in intensity, pitch, and duration, according to the organ whence it issues; yet it maintains a uniform quality which imparts to its individuality and whence its name, *tympanitic;* though to distinguish the locality of its production, it is severally called, laryngeal, tracheal, gastric and intestinal. Let us now inquire, What is it that gives this tympanitic note its individuality? Why should the air contained in the stomach, when set in vibration, emit a different tone from that of the lungs? Evidently it must depend upon conditions located in the enclosing walls that modify the character of the vibrations. The tympanitic sound, when analyzed with reference to its musical composition, is found to be made up of not merely one single tone, but of a keynote or "tonic" together with its over or secondary tones, whether these be "harmonics" or not; whereas, the normal vesic-

ular note of the lungs is composed of but a single tone. Wintrich, who has investigated this subject most elaborately, found that when, by means of the acoustic flame, the vibrations of tympanitic and non-tympanitic sounds were compared, they displayed a striking contrast. The tympanitic sound consists of from six to ten regular vibrations that follow each other at regular intervals, increasing gradually in length until the maximum is reached, and then decreasing in the same manner.

The vibrations of the non-tympanitic sound, on the other hand, are seen to be irregular, both in height and succession.

But this knowledge of the character of its vibrations does not enable us to understand the physical conditions requisite to the generation of tympanitic resonance. Thanks to the painstaking experiments and observations of Wintrich, Gerhardt and others, chiefly Germans, we are able to formulate the following law, viz.: "A tympanitic note is produced when, by percussion, the column of air within a hollow cavity of regular form, and smooth not too tense walls, is set in vibration." (Gerhardt.) These conditions are found normally in the human body in the larynx, trachea, gastric, and intestinal cavities. Please notice that one of the essential conditions mentioned is, that the walls be *smooth* and *not* too tense, in other words, capable of reflecting vibrations. That smoothness of the walls is a prime essential to their reflecting ability, is well illustrated as follows: If percussion be practiced over a glass vessel which has been pressed down into a mass of snow, the sound elicited will be tympanitic. If the glass be now taken away, the cavity thus left will give a *non*-tympanitic note. This is because the walls of snow, unlike those of glass, are not smooth enough to reflect the soniferous vibrations; if the walls be very *tense*, they are *likewise* set in vibration by percussion, and themselves emit a tone,

which obscures the tympanitic quality of the sound of the vibrating air. Therefore, according to Gerhardt, the lungs give out, under percussion, a non-tympanitic note, because of their too great tension. When partially relaxed under pathological conditions, or when taken out of the thoracic cavity, they sound, on the contrary, tympanitic. If the normal percussion note of the stomach and trachea be compared, the pitch of the latter will be found to be much higher.

Investigations have shown the *pitch* of the tympanitic sound to be subject to the following law, viz.: "The shorter the column of vibrating air, and the wider the opening with which the cavity communicates with the *outer* air, the higher the *pitch*." (Gerhardt). This can be demonstrated by percussing the trachea and cheek, first with closed, then with open mouth.

Furthermore, it has been discovered that if a mass of foam, as of the white of egg beaten to a froth, be percussed, it will sound distinctly tympanitic, the pitch being directly proportionate to the size of the mass of bubbles set in vibration.

Likewise, a beer glass filled with the foam of ale or other malt liquor, will convey a veritable tympanitic percussion note to the ear of the experimenter. In this instance, also, the pitch follows the law laid down: the greater the bulk of foam percussed, the lower the tone, and conversely.

Bearing in mind, now, the conditions above stated as favoring the development of tympany, viz.: an air-containing chamber of regular form, whose walls are smooth and not too tense; and the admixture of air and liquid within a receptacle; and also considering the anatomical structure of the lungs and air tubes, together with the physical laws governing the transmission of vibrations,—keeping these things clearly in mind, we repeat, we shall be able to understand and interpret the morbid

states of the pulmonary tissues in which we find tympanitic resonance on percussion. Let us now briefly consider them.

When a cavity is formed within the lungs, either by the dilatation of a bronchus, "bronchiectasis," or by destruction of the pulmonary tissue, through gangrene, abscess, or caseous degeneration, such cavity will give forth a tympanitic percussion note, if it comply with the conditions required. That is, if it have a regular outline and smooth walls, be occupied wholly or in part by air, and not too deeply located. If it communicate freely with a bronchus, the trachea, and thus with the outer air, its percussion sound will vary in pitch with the opening and closing of the mouth of the patient. The height of the sound emitted is also dependent upon the size of the cavity, or, in other words, upon the length of the vibrating column of air. Cavities are rarely round, but are generally longer than broad; hence, if they contain, in addition to air, liquid capable of shifting its location in response to the force of gravity, the diameter of the cavities will change accordingly, and thus affect the pitch of the percussion note. For example: if the long diameter of a cavity correspond with the antero-posterior axis of the body, and contain fluid, this liquid will occupy the floor of the cavity so long as the patient is standing or sitting, gravitating at once to the posterior extremity of it upon his assuming the dorsal decubitus. Now, the pitch of the percussion note over such a cavity is lower in the first instance and higher in the second. This is easy of explanation: in such a case, when the fluid fills the bottom of the cavity, and percussion is made over the anterior end of this latter, the vibrations traverse the entire length of the antero-posterior diameter of the cavity; when, on the other hand, the long diameter of the space is shortened, by the gravitation of the liquid to the posterior extremity, the vibration can only travel a shorter distance,

and hence the pitch of the sound is raised. This alteration in the pitch of the tympanitic percussion note is called after Wintrich, who first directed attention to the phenomenon; and when this change of pitch is determined by variation in position it offers strong corroborative evidence of the presence of a cavity. It is not easy to determine the dimensions of the smallest cavity that is capable of generating tympany. It is often unmistakable in those of the size of a pigeon's egg, and may even be heard, under favorable circumstances, when the cavity is not larger than a hazel nut.

Another pathological condition favoring the production of tympanitic resonance, is the consolidation of a portion of lung surrounding a bronchus. Normally, the air within a bronchial tube, that has a tolerably direct communication with the trachea, is not thrown into soniferous vibrations by percussion, for the simple reason that those generated by percussion in the air of the pulmonary vesicles are dispersed and lost in traversing the alveolar network. But when the lung structure is changed by consolidation, it is rendered capable of transmitting with sufficient force the impulse imparted to it to create vibrations in the air contained in the broncho-tracheal tract; and this occasions a tympanitic sound, whose pitch rises and falls with the opening and shutting of the mouth (becoming lowest of all when both mouth and nose are closed), but remaining uninfluenced by the position of the patient's body. Its pitch, furthermore, corresponds to that of the broncho-tracheal respiratory sound, as determined by auscultation. As it is often extremely difficult to differentiate this condition of affairs from the existence of a deep-seated cavity, the effect of position upon the pitch of the tympanitic percussion note may be tested.

Since, as seems most probable, the normal percussion sound

of healthy lungs is non-tympanitic by reason of the too great tension of these viscera, it follows that any condition of disease affecting their relaxation will favor the development of tympanitic resonance. Thus, in pleuritic effusions, we often detect this quality of the percussion sound immediately above the level of the fluid. Here the normal tension of the lung is overcome by the pressure of the effused liquid; and thus relaxed, the organ yields a tympanitic percussion note, whose pitch, as might be expected, does not change with the opening and closing of the mouth, since the air vibrating within the alveoli does not communicate directly enough with that in the trachea and larynx. When, however, the effusion is great, it is found, according to Gerhardt, that the pitch of the tympanitic note is higher in the upright than in the horizontal position. Moreover, this quality of the percussion sound above the level of the fluid is most evident anteriorly, near the sterno-clavicular articulation. In pneumo- and hydropneumo-thorax we obtain this same quality of sound; but here the explanation is different. To be sure, the lung relaxes its tension and retracts before the air entering the pleural cavity, whether its door of ingress be through a wound in the parietes, or a perforation, by ulceration, in the pulmonary pleura. But in this case the sound is generated by the vibrations of the column of air that intervenes between the chest wall and the retracted lung; and hence the impulsive force of the percussion shock fails to reach the relaxed pulmonary tissue. In pneumo-thorax the pitch is not influenced by change of position. Intra-thoracic tumors and a greatly enlarged heart may also so compress the lung as to favor the development of the tympanitic resonance in their immediate vicinity. Gerhardt also mentions as a clinical fact that, if a portion of a lung become greatly distended by an exudation, as in pneumonia, the adjacent parts undergo sufficient relaxation to give

forth a tympanitic percussion note. I can not explain the mode of occurrence of this decreased tension of the parts surrounding a zone of consolidation, unless on the ground that the distended alveoli encroach upon those that have remained free, and by thus offering some impediment to the ingress of inspired air, interfere with the customary expansion of the pulmonary vesicles. And of course the natural tension of the lungs is dependent upon their normal expansion.

Finally, a condition which is capable of giving rise to tympany, and whose laws are not fully understood, is the presence of air and fluid at the same time within the pulmonary vesicles. This is easily demonstrated upon the cadaver. If water be injected into the cells of the lungs, yet not in sufficient quantity to expel all of the air, they will yield tympanitic resonance, which, as the pulmonary vesicles become entirely filled with liquid, gives place to flatness, and, on the other hand, returns to true vesicular resonance with the expulsion of the fluid. Now, a similar condition of things, viz., admixture of air and liquid, is present in œdema pulmonum, and in the first and third stages of pneumonia. At these times it is often possible to elicit a distinctly tympanitic quality of the percussion note. Therefore, in cases where it is not always easy to differentiate between pleuritis with slight effusion and the first stage of pneumonia, the detection of a faint though unmistakable tympanitic ring over the area of dullness, will serve to establish a diagnosis. Unfortunately, however, this quality is not always marked enough to be perceived, yet should be diligently sought for in doubtful cases. True tympanitic resonance in pulmonary emphysema is rare. Yet when it does occur it is difficult of explanation, and is probably dependent on some modifying circumstances not yet understood. In conclusion, let us consider, for a moment, one or two conditions, where, with the

lungs perfectly healthy, the variety of resonance under discussion may be obtained in examination of the thorax. Occasionally, when the stomach or bowels are greatly distended with flatus and ride high up under the diaphragm, vigorous percussion over the base of the lungs will, in persons with elastic parietes, give tympanitic resonance; this is readily explained by the fact that the impulse imparted to the chest walls is conducted to the flatulent viscera and sets their contents in vibration. The same cause operates when the "cracked metal sound" is sometimes elicited by the forcible percussion of the chest of a young child suffering with bronchitis, a condition where cavities can manifestly not exist. Again: Friedrich, in his work on diseases of the heart, narrates the case of a woman who was ill with pericarditis. A few hours prior to her death a high-pitched tympanitic percussion note was elicited over the præcordia, and at the autopsy the pericardium was found distended with fluid and gas. Such instances are of extreme rarity.

ARTICLE II.

OUR CHILDREN'S EYES AND BOOKS. *By* F. C. HOTZ, M. D. *Chicago.*

A child is seldom born near-sighted, and an adult past the twentieth year scarcely ever gets near-sighted, though his occupation (as watchmaker, for instance) may demand the constant use of his eyesight at a very short range. But although the most children enter school with good eyesight, the experience all over the world has shown that a great many children leave the school near-sighted. Within the past ten or twelve years numerous examinations of the eyes of school children (between six and sixteen years) were made in every country of the civilized world; and whether the reports come from Germany or France, from England or Russia, from Switzerland or our own country, all the statistics prove that there is more or less near-sightedness in every nation, and that the percentage of near-sighted pupils increases in all countries (in some countries at a frightful rate), from the lower to the higher grades in each school, and from the common schools to the high schools and colleges. On the other hand, it is a fact that near-sighted eyes are not found among the uncivilized races.

These observations and facts have lead to the conclusion that there exists an intimate causal relation between the occupations of our children during the period of school life and the development of near-sightedness, and that reading and writing are the occupations which, under certain conditions, act so injuriously upon the eyes of children. The sclerotic of their eyes is thin and extensible; its form, therefore, may possibly be influenced by tension and pressure; and as the size of the eyeball is principally determined by the shape of its sclerotic, the same forces which can change the shape of the latter will

necessarily change the length and breadth of the eyeball.

During reading and writing we must adjust the focus and the visual axis of our eyes to the distance at which the book is placed. Both these adjustments (accommodation and convergence) are executed by the contraction of muscular fibres (the ciliary and recti muscles), and it is supposed that by the long-continued and oft-repeated tension and pressure upon the eyeball, associated with these muscular contractions during accommodation and convergence, the extensible sclerotic of a child's eye can be stretched and the eyeball be elongated, and so become near-sighted.

Here the question might be asked, If this theory be correct, why do not all eyes become near-sighted, as all school children have to read and write? This question can be answered with the same explanation which we give in accounting for the fact that some children's health suffers seriously by the same amount of school work which other children can do with the greatest ease and comfort. We speak of robust and delicate constitutions to indicate the different degrees of endurance for physical or mental work which different individuals possess; and we may with the same propriety speak of robust and delicate eyes to explain the different effect the same amount of school work produces upon them. A child with robust eyes will at the end of his school period still enjoy perfect eyesight, while the delicate eyes will break down under the same amount of work and become near-sighted.

The degree of endurance of the eye, the greater or less tonicity of its tunics, is largely dependent upon the constitutional character of the whole organism. The robust children, as a rule, are blessed with good and strong eyes, while the weak and delicate constitutions furnish the feeble and easily extensible sclerotics of the myopic eyes. And when we are informed

by the statistician that the percentage of near-sighted school children is much larger in cities than in country districts, this is exactly what we should expect to find according to the constitutional differences between city and country children.

If we recognize the important role the constitutional infirmity of a child plays as a predisposing cause of myopia, if we believe the eyes of weakly constituted children are so delicately constructed that their natural growth can be easily disturbed and their shape be altered by the ordinary amount of school work, we understand at once why near-sighted children are found in every civilized country. Our children must get a proper school education; they must read and write; they must apply their eyes upon books; and since in every community there is always a number of delicate children whose eyes cannot endure the efforts of accommodation and convergence, they are doomed to become near-sighted.

Myopia, therefore, is in a certain sense the logical result, the inevitable evil, of our civilization, and will exist as long as this lasts. But while we cannot hope for the complete extermination of this evil, because the predisposing causes are beyond our control, we may expect to mitigate it and to reduce the number of its victims, because the immediate causes of myopia (accommodation and convergence) can be regulated and controlled; for many children who otherwise would grow up to manhood with perfect eyesight become near-sighted because they are allowed to read under disadvantages which overstrain the muscles of accommodation and convergence. All these eyes could be saved by a little care and attention. We should see that our children do not read too long; we should see that they do not read by insufficient light, and we should see that they do not approximate the book too much.

Whatever is said about reading applies to the act of writing,

too; but of the two occupations I regard reading as having the greater influence upon the development of myopia. Unquestionably, a child reads a great deal more than it writes; and when it reads an interesting book its eyes are steadily fixed upon the page and never allowed to rest except when the leaf is turned; while in writing, the frequent interruptions for filling the pen afford to the eyes as many occasions for relaxing the muscles of accommodation and convergence. If, therefore, the continuous and excessive efforts of these muscles produce myopia, they are more likely to produce the injury during the act of reading than during writing.

Children have a natural tendency to hold small objects unnecessarily near their eyes. This tendency is the principal source of danger for eyes disposed to become near-sighted; and parents and teachers cannot be too careful lest this tendency to approximate the book grows into a bad and dangerous habit. Since our children cannot get a proper education without reading and writing; since they must read, we should at least see that they do it under conditions which put the least possible strain upon their eyes. It is, therefore, of the utmost importance to know that eighteen to twenty inches are considered the shortest distance at which children may safely be allowed to read. For this distance the convergence of the visual axis is so slight and the amount of accommodation so small that the muscles of the eyes are not taxed severely. But with every inch by which this distance is shortened the work imposed upon the ocular muscles rapidly increases, and soon causes a degree of tension and pressure dangerous to the soft tunics of a child's eye.

But if we do not want our children to read at a distance less than eighteen inches we must not let them have books with print which it is next to impossible for them to read at the

required distance. *Javal*, *Weber*, *Cohn*, and others who have written on this question of book print, declared that books should not be printed in letters smaller than 1.50 millimeter, and some experts put the limitation even at 1.75 millim. for children's books. Easy and comfortable reading furthermore requires that the lines should be well "leaded;" in other words, there should be an interval of space between the lines of no less than 2.50 to 3 millim.; and it is hardly necessary to mention that the paper must be smooth, firm, and thick to show a clean and clear print. A beautiful specimen of good book print, which can be highly recommended to all publishers, is Solis Cohen's work on "Diseases of the Nose and Throat" (size of letters 1.75 m.). If the reader compare that print with print of this Journal (size of letters 1.50 m.), or with that of the *Chicago Tribune* (local columns 1.00 m.), he will realize the difference between proper and improper print; and by the different effects they produce in his own eyes he may judge what the effect must be upon the tender eyes of children. And he will at once be interested to know what sort of print our children read in school and at home.

To answer this question, I have examined the most books used in the Grammar and High Schools of Chicago; also a number of books at the Public Library which were pointed out as much read by boys and girls; and finally, the magazines for young folks. This examination has brought out some very interesting facts.

Of ten books of the Grammar Schools all but one reached the standard. This one exception is the "School Dictionary;" the words are printed in *agate* (1.00 mill.) and the definitions in pearl (0.75)! and one millim. is allowed between the lines. Just think of the contrast! Now the child's eyes are resting on the large, clear, and easy print of its Reader, and the next

minute they must accommodate themselves to the blurred microscopic letters of this Dictionary. These sudden changes of the accommodation, repeatedly made in short intervals, are a fruitful source of spasm of accommodation among children. If any fiend attempted to ruin the eyes of our children he could not hit upon a better device than this School Dictionary. It cannot be condemned in too severe language, and no school board with a heart for the welfare of the children should tolerate its use in the schools. If the teachers cannot give the proper definitions of such words as children eight or nine years old use and read, if young children must use a dictionary, let them at least have one with decent type.*

The fourteen High School books I examined make a very good record; all have good paper, the text is printed in letters of 1.75 mill. in ten and 1.50 mill. in four books; the interlinear space 3 mill. in six, 2.50 in eight; only in the notes the type is reduced to 1.25 mill.

In the twenty-three books of Fiction at the Public Library the paper was not of uniform quality; in ten it was good; in eight fair, and in five positively poor. *None* of the books had letters of 1.75 mill.; in seven only they measured 1.50, while in sixteen (that is in the majority) the size was 1.25 mill. The width of the interlinear space varied all the way from 2 to 3.75 mill., but in the majority it ranged between 2.25 and 2.75 mill.

Highly interesting is the examination of the magazines and papers for the young people. Ten periodicals were examined;

* In this connection let me call the attention also to the small Bibles commonly used by children in the Sunday schools. The letters of the text measure 0·75 millim., and the italics of the superscriptions of the chapters are still smaller. The space between the lines is one millim. wide, and the paper is of so much inferior quality that the print shows through the paper. It is the worst kind of book print I ever saw, and what I have said concerning the School Dictionary applies even with greater force to this kind of Bible. Further comment is unnecessary.

the paper was found good in four, fair in two and poor in four The letters measured 1.75 in but one; 1.50 in three; 1.25 in five, and 1.00 in one. The interlinear space was 3.25 in only one paper, in all the rest it varied between 1.00 and 2.25 mill. There was but one paper among the eleven which attained the standard of good paper, proper size of type and proper leading. And the magazine whose letters dwindled down to 1 mill. (agate) and whose lines are separated only by 1 mill. space is one of the most popular, if not *the* most popular paper read by our girls and boys.

In reading this report we cannot fail to notice the great difference in quality of print between the school books on the one side, and the books and periodicals the children read at home. The superiority of the school books is worthy of special notice. For it has been a common practice to charge the schools and school books with being the principal causes for the development of myopia. Much stress has been laid upon the injurious effect of insufficient or faulty illumination of school-rooms; much has been written about unsuitable school desks and seats, and grand results were confidently expected from a reform of the school rooms. But the results were sadly disappointing. The statistics showed that in the best arranged schools the number of myopic children was not smaller, nay, sometimes was found even larger than in similar schools with inferior appointments. Like the man who sees the mote in his neighbor's eye, but not the beam in his own, we were quick in exposing the faulty hygiene of the school room, but have paid little or no attention to the great and glaring offenses which were daily committed against the same hygienic principles in our homes. When our children get near-sighted, the mischief is not done principally in the schools, but at home! Our school rooms are well lighted; our school desks and seats are

acknowledged, the world over, as models of simplicity and perfection; and the desks are placed in proper relation to the windows. And as my examinations of the school books show, they, too, stand the test admirably well; all (with one exception, which I have noted,) fulfill those requirements which we regard of paramount importance in a book for the use of children.

But now let us look to the homes! How many houses afford the children as well lighted rooms as their school room? The rooms of the rich are dimmed by curtains and shades, and the rooms of the poor are dark for want of large windows, or because they are situated in basements or narrow alleys. How many children have a suitable desk and chair at home? How many parents take care that their children do not read or write with the light falling on the book from the wrong side, or in the evening seated too far away from the gas light? And how many books the children read at home can compare typographically with their school books? As our statistics show, only seven out of twenty-three books, and only one out of ten periodicals! But if the prolonged application of the eyes of children is the chief cause of making eyes so disposed near-sighted, upon which books do our children fix their eyes more steadily, more attentively, and more uninterruptedly? On the school books which they are obliged to read, or on the story books which they read for pleasure? Which, consequently, are likely to do the more harm to their eyes, the bold letters of the Fourth Reader, or the blurred nonpareil of the "Arabian Nights;" the clear brevier type of "Shaw's History of English Literature," or the fascinating stories of the "Waverly Magazine" with its agate type?

When we look at a child deeply absorbed in a story book; when we see how the little face gradually approaches and

almost touches the page; and when we then think of the enormous muscular strain these young eyes have to endure, in order to read the miserable print, then we shall know better at whose door we have to lay the responsibility for the impaired eyesight of so many children. Let parents understand that the hygienic principles they are so anxious to see observed in the schools must just as strictly be enforced in their own house. Let them adopt the typographical standard of the school books for all the other books their children may read, and there will be no place for penny papers, dime libraries and all the rest of the so-called cheap literature. It is the dearest sort of reading matter people can buy for their children; it is a penny-wise-and-pound-foolish domestic policy; they are saving the pennies but wasting that which once lost no money in the world can restore—perfect eyesight.

181 Clark Street.

ARTICLE III.

SURGICAL TREATMENT OF ACUTE, CIRCUMSCRIBED, PULMONARY GANGRENE; *Second Successful Operation; by* PROFESSOR C. FENGER, M. D.

Among the excellent voluntary papers presented at the last meeting of the Illinois State Medical Society, was a contribution to the surgical treatment of acute pulmonary gangrene, by Prof. Christian Fenger, M. D., of Chicago. The paper deserves and will elicit general attention, both from its intrinsic merit and as indicative of progress in American surgery.

As advised at the present time, four operations for acute pulmonary gangrene have been performed.

The first operation was performed in 1879, by Messrs. Lawson and Cayley, of England, in a case of pulmonary gangrene of five weeks' standing. Decided amelioration of symptoms, more particularly as regards cough, dyspnœa and fetor, was observed. The patient died of exhaustion four days after the operation. The autopsy disclosed facts which led the operators to believe that an earlier operation would have saved the patient's life. (Med. Society, London, 1880.)

Mr. Solomon Charles Smith, of Halifax, performed the second operation in 1880. The patient was in the second week of croupous pneumonia, when gangrene occurred in the lower lobe of the left lung. The patient lived ten days, with marked improvement in cough, dyspnœa and fetor. No autopsy was made.

Professor Buhl, of Christiana, performed the third operation in 1880. Acute gangrene in the anterior portion of the left lung was the indication for operation. After a long convalescence of six weeks the patient recovered.

The fourth operation was performed by Professor Christian

Fenger, of Chicago, in the Cook County Hospital, in April, 1884.

The patient, male, 34 years old, was in the second week of croupous pneumonia. Signs of consolidation and formation of a cavity in the right infra-mammary region, extending into the right axilla, were elicited by auscultation and percussion. Cough was distressing and dyspnœa great; about one pint of extremely offensive sputa was daily expectorated. The patient lost all appetite and rapidly progressive emaciation supervened. A cavity was found, upon the introduction of the needle of a hypodermic syringe through the thoracic wall, in the right infra-mammary region. An incision was made parallel to the clavicle; the ribs exsected to an extent sufficient to secure access to the part, and the needle re-introduced within the cavity, as a guide. The cavity was then cut down upon by the small platinum pole of a Paquelin's thermo-cautery, and an opening sufficient to admit the index finger secured. Digital exploration revealed no detached gangrenous masses. Accordingly, the cavity was gently washed out, a drainage tube inserted, and the usual antiseptic dressing applied. Hemorrhage during the operation was trifling, but washing out the cavity produced very troublesome coughing. The patient speedily reacted from the shock of the the operation, which was relatively slight.

Five hours after the operation, appreciable diminution in fetor was noted; at the end of the first week, expectoration was minimal, and fetor could not be perceived; at the end of the second week, decided improvement with return of appetite was observed; the fourth week witnessed further progress; and at the end of the fifth week the patient was out of bed. During convalescence bits of gangrenous lung tissue were discharged through the external opening.

With reference to the *technique* of the operation, Dr. Fenger recommends :—

1. The incision ought to be made parallel to the ribs.

2. The ribs must be exsected to a degree sufficient to secure access to the part.

3. In conformity with the suggestion of Albert and Mosler, the needle of a hypodermic syringe should be used as a guide into the cavity, or diseased lung tissue, and the small platinum pole of Paquelin's thermo-cautery should be employed to effect the opening.

4. The cavity must be washed out if practicable. Due care must be exercised to prevent drowning, if the cavity connects with a bronchus. Irrigation of the cavity was productive of no untoward effect in Buhl's case, but was the cause of troublesome cough in Fenger's patient, and Mosler ascribes one death to poisoning from thymol irrigation.

Dr. Fenger is of the opinion that there is no immediate danger of death from the operation, and that it is indicated in cases of acute, circumscribed, pulmonary gangrene.

ARTICLE IV.

A CASE OF ANEURISM OF THE ABDOMINAL AORTA, WITH NOTES OF POST MORTEM EXAMINATION.

By MARK H. SEARS, M. D., *Leadville, Col.*

I was called some time since, to see, A. H., a native of Switzerland, thirty-seven years of age, and a resident of the United States for about ten years; occupation, a miner and its kindred pursuits; of phlegmatic temperament. He stated that about two years ago he first began to complain, but that his symptoms were obscure and uncertain. About eighteen months ago he began to have some pain in the umbilical region. At the same time, or soon after, he noticed some induration and a sensation of fullness, which had since gradually increased.

I found his pulse small and thready, about 100 per minute; temp., 100 F.; respiration about 25 per minute; skin dry and harsh; capillary circulation sluggish; bowels fairly active, and alvine discharges apparently normal; appetite capricious, evincing some desire for the animal broths; assimilation poor; mentality good, answering without hesitation questions addressed to him. Complained of some pain in the left lumbar region of a dull and heavy character. A few days before I saw him, he had complained of severe neuralgic pains in the course of the anterior crural nerve and its branches. These symptons had been relieved by morphiæ sulphas in suitable doses, and had ceased to recur when I visited him. These were the only symptoms of spinal origin which occurred in the history of the case.

The patient had also been "leaded" several times—this is the common expression for lead poisoning among the miners of this region. Upon examining the abdomen I found presenting in the lower portion of the left inguinal region, an

indistinctly fluctuating tumor of considerable firmness. It extended from midway of Poupart's ligament, to a point upon the linea alba two inches above the crest of the pubes.

There existed in it a distinct thrill with each ventricular contraction, that expanded the walls of the tumor equably with each pulsation. Pursuing the examination upward, I found in the upper portion of the left inguinal and lower portion of the left lumbar regions a hard, resisting, non-fluctuating body, situated subcutaneously. Subsequent information obtained post mortem, proved this to be the left kidney. Continuing the course of the tumor, which had again resumed its firm though fluctuating character, I traced it upward through the region last mentioned into the left hypochondriac region, where its outlines were partially lost beneath the floating ribs.

Throwing the patient upon his right side, there appeared upon the back of the left side a circumscribed enlargement of the size of a large orange. It commenced at a point about one and a half inches to the left of the tenth and eleventh dorsal vertebra, extending around the side anteriorly.

The integument covering it was injected, cyanosed, nearly devoid of sensation, and dotted at intervals with minute points of ulceration. The physical characteristics were the same as those presented by the tumor in the abdomen. They were better marked, however, as the tissues covering the enlargement were being absorbed rapidly and consequently its covering thin. Percussing it, the resulting note was heavy and dull, as though the tumor were solid. As the post mortem revealed one or two inches of semi-organized fibrin lining the cavity of the growth, it explains the non-appearance of a percussion note more tympanitic.

Auscultation gave greater satisfaction, and revealed the aneurismal "bruit," although somewhat indistinctly. The second

sound of the heart was well defined in the tumor. The cavity of the chest presented the physical symptoms of hydrothorax of left pleura; while in the right lung the normal vesicular murmur and resonance existed only in the lower portions. Heart's action was weak and uncertain, apex pushed forward and to the left, impulse in fifth intercostal space, area of præcordia diminished in size.

From this association of symptoms I diagnosticated "Aneurism of the Abdominal Aorta."

The patient died May 12th, 1884, probably from exhaustion, there being no rupture of the aneurismal cyst.

Post mortem examination three hours after death.

Body greatly emaciated, of about 100 lbs. weight, some icterus.

Same tumefactions as had existed in life present; but now, instead of being firm and unyielding, they are soft and compressible.

First line of incision passed from pubes to top of sternum, intersected by the usual crucial incision in abdomen. Flaps reflected back, Stomach of normal size, shape, etc. Position entirely changed. The greater curvature lay immediately in contact with the abdominal parietes, the lesser curvature toward the vertebral column, and embracing the renal vessels of the left kidney, whose position will be described presently. The cardiac and pyloric orifices, which were respectively superior and inferior, were on nearly a direct plane.

At the left of the stomach, covered by the abdominal muscles, great omentum, and partially in the inguinal and lumbar regions, as previously mentioned, lay the left kidney. It was enclosed in a capsule of adventitious tissue—possibly the elements of the normal fibrous capsule pathologically enlarged and added to by the results of a very low chronic inflammation,

whose results were everywhere apparent in the great number of adhesions.

After carefully removing this capsule, the kidney and renal vessels were exposed. The latter were elongated and passed beneath the lesser curvature of the stomach to their respective origins. Removing the kidney and cutting into it, both the cortical substance and medullary portion were found infiltrated with fat—fatty degeneration.

Liver, healthy, but rather small for a person the size of the subject.

Spleen, normal, but somewhat flattened between the walls of the abdomen and the walls of a large tumor which now presented. The small intestines had been forced into the cavity of the pelvis and right side of the abdomen.

The tumor, which was ten inches long, lay with its base pressing upon the external iliac artery, while its large bulbous apex pressed into the posterior hypochondriac region on the left side and formed the large protuberance externally on the back.

It embraced both sides of the bodies of the four upper lumbar vertebræ with their transverse processes, and the bodies of the eleventh and twelfth dorsal vertebræ. So firm were the adhesions that it was not practicable to remove it in its entirety. In this event I deemed it best to evacuate the contents if possible. I made an incision into it, and after passing through one and one-half inches of organized fibrinous material lining the sac, I reached a cavity, and verified the diagnosis of aneurism which had been made

The contents of the cavity were clotted blood, which with the fibrinous material was removed. The opening into the aorta was one and one-half inches below the cœliac axis, was three-quarters of an inch wide, and one and one-quarter inches

long. The wall which had existed between the aneurismal cavity and spine had been absorbed, so that the bodies of the vertebra were exposed to the direct action of the blood and pressure of the aneurism. Never were the effects of continued pressure better exemplified. The transverse processes of the first, second, and third lumbar vertebræ were completely destroyed on both sides; those of the fourth lumbar, partially; also the bodies of the several vertebræ mentioned, together with those of the eleventh and twelfth dorsal, to nearly their center, and in one instance an opening into the spinal canal. It is worthy of remark that there was no evidence of functional derangement of the spinal cord in life other than that of the crural neuralgia mentioned in the first part of this article. The lesion would seem severe enough to have interfered with the integrity of the spinal canal, and produced pressure upon the cord with its obvious results.

The sac with its contents having been carefully removed, was found to weigh 6½ lbs. av.

There was no rupture in its walls, which were one-quarter of an inch thick.

The examination of the heart revealed fatty degeneration. The left lung was collapsed and bound down by old pleuritic adhesions; while the pleural cavity contained about three pints of serum—much of it post mortem, I presume. The upper lobe of the right lung was consolidated and contained a small abscess.

In conclusion. There was neither history nor evidence of syphilitic taint, none of violence. The disease occurred in the person of a strong middle-aged man, whose only ailment previous to this fatal disease, had been several attacks of acute lead poisoning, which probably had saturated his system. In the absence, then, of evidence to the contrary, I shall ascribe his aneurism to chronic lead poisoning.

ARTICLE V.

INJECTIONS OF GLYCERINE AND CARBOLIC ACID FOR THE PRESERVATION OF BODIES FOR DISSECTION. O. T. FREER, *M. D.*, *Munich.*

During a course of dissection in the anatomical department of the University of Munich, I observed that the material showed a remarkable resistance to decay, being still fresh at a period when the average subject of Chicago's dissecting rooms is too much decomposed for use. The parts which I was dissecting were in almost as perfect a condition after exposure to the air of a warm room for from two to four weeks, as when they were first given me; and those portions from which the skin had not been removed remained entirely unchanged.

On inquiry I learned from Professor Rudinger, Munich's anatomist, a man who has written numerous valuable works and done much for science by his original researches, that he preserved his subjects by injecting into the femoral artery a mixture of glycerine, carbolic acid, and alcohol, a method invented by himself and used here since 1872.

Since its introduction he had seen no bad effects from dissection wounds here.

He said that, according to the amount of injection-material used, subjects would keep from two to six months in a summer-temperature, the only necessity being moisture to prevent mummification.

The solutions used by Professor Rudinger are:

(*a*) For preserving bodies for long periods, three to six months: Glycerine, 40 parts; carbolic acid, crystalized, 11; alcohol, 8.

(*b*) For preserving bodies from two to three months: Glycerine, 80 parts; carbolic acid, 17; alcohol, 13.

The amount injected varies according to the length of time it is desired to preserve the subject, from two to four liters being ordinarily used; but an average body will readily contain six and more.

The advantages of this method are, that the tissues preserve their natural appearance and pliancy from the commencement of an ordinary dissection to the end. Students, therefore, need not hurry their dissection, even in warm weather, as decomposition is so slow that the parts dissected last are in as perfect a state as those seen first. The solutions mentioned above do not whiten the tissues, which retain their natural appearance to the end.

ARTICLE VI.

SURGICAL DELUSIONS. *An Abstract of the Address in Surgery of the Medical Society of the State of Pennsylvania for 1884, by* JOHN B. ROBERTS, M. D., *Professor of Anatomy and Surgery in the Philadelphia Polyclinic.*

Many surgical theories and procedures have become traditional, and are accepted as true and correct merely because reverence for antiquity or careless acceptance has not questioned their right to be classed as surgical facts. The present age is an incredulous one, and demands accurate investigation of all such claims. The field of investigation is large, for progress has been retarded by the influence of theorizing writers with monochromatic vision, the example of non-seeing and non-looking devotees of the fetiches of surgical superstition, and the convincing effect of a repetition of false statements. I shall select a few topics which have greatly interested me, and concerning which I probably differ quite widely from many of you.

CHLOROFORM ANÆSTHESIA.—Many still cling to the delusion that chloroform is a safe anæsthetic, because they have never seen a patient die from it. Is one man's experience to weigh against the physiological, the experimental, the clinical experience of the whole world? Dare we employ chloroform instead of ether, when recognized authorities state that in chloroform anæsthesia death occurs without warning in the hands of experienced administrators? when some five hundred deaths have already been reported? when Schiff and Dalton reject it in physiological laboratories because of its mortality? when the Scientific Grants Committee of the British Medical Association assert that chloroform is a more dangerous anæsthetic than ether?

Adherence to chloroform in the face of such facts is criminal when circumstances permit ether to be obtained. The assertion that it is often impossible to produce anæsthesia with ether is the result of inefficient methods of administration. Ether, if given as chloroform is and should be given, is in truth a useless anæsthetic, but given properly, it is efficient.

VALUE OF STYPTICS.—The belief in the necessity of styptics is a delusion less dangerous than that just mentioned, but is given more extended credence. Such agents are seldom, probably never, needed in general surgery to arrest hemorrhage. When ligatures, torsion or acupressure is not demanded (and such is seldom the case unless the artery is as large as the facial), moderate direct pressure applied in dressing the wound is the only hemostatic required. Styptics often do harm, and as they are not needed, they should be discarded.

FATALITY OF SMALL HEMORRHAGES.—There is much apprehension about the quantity of blood that a healthy man can lose with impunity. Many who often look with equanimity upon a parturient woman losing a pint of blood from the uterine sinuses would be dismayed at a man losing half or quarter that amount during removal of a tumor. While not advocating useless waste of blood, and especially in patients suffering surgical shock, I assert that there is an unnecessary fear of blood spurting from a few insignificant vessels. The largest artery can be controlled by pressure not greater than is used for ringing the electric bell in your hotel. Hence, there is always sufficient power in your fingers to obviate fatal hemorrhage until strings can be obtained and applied.

DANGER OF TREPHINING THE SKULL.—The dislike to make exploratory incisions in closed fractures of the skull, evinced

by some surgeons, and the objection of others to trephining, and thus opening the diploic structure in open fractures, are delusions of a most disastrous tendency. To wait until symptoms of cerebral compression or inflammation have supervened is to lose the most favorable opportunity for mechanical relief. Such a Fabian policy is often followed by death. The treatment of open and of closed fractures of the skull should not be looked upon as very different, since with the present improved methods of dressing wounds the successful issue depends almost entirely upon the cerebral rather than the cranial phase of the injury. If such fractures as we usually see in the skull were not in proximity to the brain the surgeon would consider them almost trivial. The feature of closed fractures that renders them so troublesome is the obscurity that accompanies them. I have for a number of years strongly advocated making closed fractures open ones by means of an exploratory incision whenever there is a suspicion of the existence of depression or splintering. In open fractures, operation to elevate depressed portions and get rid of splinters of the inner table thrust into the membranes, should be undertaken rather than avoided. It is better to err on the side of action than that of inaction. Careful manipulation and proper dressings at an early stage are sources of less risk than is incurred by the surgeon who leaves, unseen and unsuspected, fragments thrust into the membranes or brain.

OPERATIVE DELAY IN STRANGULATED HERNIA.—A similar delusion of fatal issue is that leading to postponement of operative interference in strangulated hernia. Repeated attempts at forcible taxis and medical pow-wow-ing with temporizing measures, have ended more lives than the use of the knife. Herni-

otomy done within twelve hours is almost always followed by recovery. Death is to be expected, however, if strangulation has existed for two or three days, and the gut has been bruised by violent manipulation in the endeavor to relieve the constriction by taxis. Moderate taxis under ether, a half-day's treatment with cold applications and the internal use of morphia, and a second moderate attempt at taxis followed, if unsuccessful, by immediate operation, is the sequence to be followed in strangulated hernia. When symptoms of strangulated hernia exist, the slightest fullness and tenderness in one groin over either of the rings, is a sufficient localizing indication to warrant operation.

OPERATIVE DELAY IN ACUTE PHLEGMONOUS INFLAMMATION.—No insane delusion, no Spanish Inquisitor, ever caused so many hours of excruciating physical torture as the hallucination that acute abscesses and furuncles must not be incised until pointing has occurred. All the world knows that evacuation of imprisoned pus in phlegmonous inflammations means instant relief of the agonizing pain, yet how few of the profession early and freely incise such inflamed tissues unless they first see the yellow pus under the thinned skin or feel the fluctuation of the fluid in the abscess cavity. The pain is causd by the effort of the pus and sloughing tissue to escape. Is it not, then, more rational to make a free incision to-day than to wait till next week? Time and pain are both saved by early incision. If the cut is made before the pus has actually formed, so much the better. Probably no form of abscess needs early and free incision more imperatively than that under the palmar fascia. Destructive burrowing of pus is prevented by this radical procedure, which also saves the patient many days of poultices and purgatory.

OPERATIVE DELAY IN MALIGNANT TUMORS.—Much bad surgery results from a delusive postponement of operative interference in malignant diseases. Instant removal is to be practiced in such cases, provided the patient is deemed fit to stand the surgical shock.

NECESSARY FATALITY OF TRAUMATIC TETANUS.—That traumatic tetanus is of necessity fatal, is a commonly held opinion. Proper treatment is sometimes neglected because of this belief in its hopelessness. That the prognosis is extremely unfavorable, I admit; but that cases of a severe type recover, is undoubted. Chloral hydrate, in full doses, has given the best results. But I do not propose speaking of therapeutics at this time. I merely wish to impress upon the profession the fact that a fair number of cases of traumatic tetanus recover.

FATALITY OF PERICARDIAL AND CARDIAC WOUNDS.—The prevalent notion of the excessive danger of these wounds is delusional, at least in as far as it teaches that these structures will not brook surgical interference. The pericardial sac should be dealt with exactly as the pleural sac—by aspiration, incision, irrigation and drainage according to the lesion. That simple puncture or aspiration of the heart itself is not accompanied by the expected risk to life, has been pretty well shown, though I am not prepared to recommend its general adoption for trivial cardiac conditions.

SYMMETRY OF NORMAL LIMBS.—Another delusion, still existing in many minds, is that the lower extremities are usually of the same length. Clinical and anatomical investigation show that asymmetry in the length of normal limbs is of common occurrence. Therefore, measurements of the legs in cases

of fracture are of little value, since it is impossible to know whether it is the femur of a long or a short leg that is the seat of injury.

USELESSNESS OF TREATING VICIOUS UNION OF FRACTURES.—It is a fact, not sufficiently appreciated, that many cases of deformity from imperfectly treated fractures of long bones, can be remedied by refracture. Over and over again have I seen cases of grave disability and deformity cured by the application of sufficient force to break the callus uniting the misplaced fragments. Five or six months is not too late to resort to this expedient for correcting what otherwise must be a life-long evidence of defective surgical attendance.

There are many other prevalent surgical delusions, such as that bony union of transverse fractures of the patella, and of intracapsular fractures of the femoral bone cannot take place; that chronic purulent discharges from the ear do not need active treatment; that hypermetropia and hypermetropic astigmatism can be properly estimated and corrected without paralyzing the accommodation; that it is improper to perforate the nasal septum in cases of great deviation; that crooked noses are not amenable to treatment; that corneal operations and cataract extractions should be treated by cotton padding and bandages to the eyes; that fractures should be treated with carved or manufactured splints.

While an earnest advocate of conservative and of reparative surgery, I believe that, when operative surgery is demanded, it should be aggressive. Delay, indecision, and inefficiency impair the value of much surgical work, and are often the legitimate result of a superstitious faith in delusive surgical dogmas.

In Memoriam

WITHIN THIS URN LIE THE ASHES OF

SAMUEL DAVID GROSS

A Master in Surgery

His life, which neared the extreme Limits of the Psalmist,
was one unbroken process of Laborious Years.
He filled Chairs in Four Medical Colleges in as many States of the Union,
and added Luster to them all.
He recast Surgical Science as taught in North America,
Formulated anew its Principles,
Enlarged its Domain,
Added to its Art, and imparted fresh Impetus to its Study.
He composed many Books, and among them

A System of Surgery

Which is read in different tongues, wherever the Healing Art is practiced.
With a Great Intellect, carefully trained and balanced,
He aimed with undivided Zeal
At the Noble End of Lessening Human Suffering
and Lengthening Human Life,
And so rose to the Highest Position yet attained in Science
by any of His Countrymen.
Resolute in Truth, he had no Fear, yet he was
both Tolerant and Charitable.
Living in Enlightened Fellowship with all Laborers in the
World of Science,
He was greatly Honored by the Learned in Foreign Lands
and deeply Loved at Home.

BEHIND THE VEIL OF THIS LIFE THERE IS A MYSTERY WHICH HE PENETRATED ON THE

Sixth Day of May, 1884

HIS MEMORY

Shall Exhort and his Example shall Encourage and Persuade
those who come after him to Emulate Deeds
which, Great in themselves,
Were all Crowned by the Milkwhite Flower of a

Stainless Life

EDITORIAL.

MORE ABOUT PUBLIC LAUNDRIES.—There is a melancholy species of poor satisfaction to be derived from the contemplation of the woes of a neighbor whose sufferings have been profoundly experienced in our own person. This frank admission of the lower instincts of a depraved human nature, is suggested by glancing over the published report of the late General Medical Council of Great Britain. In one point, and in one point only, does this report suggest the transactions of some of our State Boards of Health. The sole point of resemblance is the opportunity, which is here improved, to do the washing of some soiled linen in public. If it is painful for us who live in the State of Illinois to have the mass of British practitioners understand that the professional men of the Northwest do not know how to spell, it may be scarcely less disagreeable to English gentlemen to have the inhabitants of the settlements in the wild west impressed with the conviction that the average British practitioner is a person capable of setting fire to property, of personating other individuals, or of being guilty of other crimes for which the penalty of the law has been inflicted behind the bars of a government penitentiary.

For it is a melancholy fact that in the report of the Council to which we refer, one Sadgrove had his name removed from the Register "on account of having pretended to have qualifications which he did not possess." (How many names, alas,

would disappear from the roster of great men in science, if this rule were successfully and rigidly enforced in all cases!)

At the same meeting, one Story was refused restoration to the Register because, in the year 1881, he had been convicted of arson for which he had suffered two years imprisonment. Again, one Smith (and even this not unfamiliar name persuades us that in many respects, indeed, the practitioners on the other side of the Atlantic are truly our brethren after the flesh, with a tendency for the same imposthumes to develop upon their otherwise vigorous bodies!) who had lost registration in 1873 on account of "infamous conduct," was restored by the Council at this same meeting on the petition of a large number of medical practitioners. A curious case was presented in the person of one O'Hare, who had personated a registered practitioner named O'Hara. O'Hare, it seems, had suffered erasure from the Register in 1878, on account of "felony;" while the man whose name he had assumed had also been dropped from the Register in consequence of failure to reply to certain letters which had been addressed to him. One Murray also suffered erasure from the Dentists' Register on account of "infamous conduct."

From certain recommendations, made by the committee also the idea is conveyed that at the examination of candidates for license to practice, some who were capable of successfully passing the examination had been guilty of "personating" those who were not capable of undergoing the ordeal, thus securing the license for the latter. We sincerely hope that the announcement of this fact in this public manner will not stimulate Yankee ingenuity to the perpetration of a still more refined method of outwitting law.

We beg leave to assure our British brethren, with sincerity and a due degree of emphasis, that while on this side of the

Atlantic we do not all know how to spell, there is, in the language of their countryman, Mr. Matthew Arnold, "a remnant" of us who do. Though we understand from the report of their General Medical Council that there are British practitioners in the United Kingdom who have been guilty of "arson," "infamous conduct," "felony," "personation," and divers other eccentricities, some of which have been punished by imprisonment, we are firmly convinced, and we say it without fear of contradiction, that there is "a remnant" of British practitioners who have not been guilty in these particulars.

Critics more invidious and less magnanimous than they should be, might be tempted here to make some odious comparisons. But we shrink with aversion from such a course. Let it be ours rather to cover with a mantle of charity these shortcomings of our British neighbors, and to admit frankly that we too have sinners on this side of the water. Let it be ours to urge that they take warning from our example, lest a worse state of affairs overcome them. DeQuincey first characterized the man who began by committing murder, and concluded by becoming the worst of confirmed procrastinators. If the British Register be not thoroughly purged, the dreadful consequence may be, that the men who have set an example to others by the commission of the crimes named above, may be followed by others who actually misspell their mother tongue!

ANATOMICAL BILL.

The bill to amend the present law regarding the disposition of unclaimed dead, framed by the Demonstrators' Association of Chicago, lies before us. A letter from the Secretary of the Association, Dr. A. B. Strong, 533 West Monroe street, Chicago, with a copy of the bill, has been sent to all physicians in the State, soliciting their aid, and requesting them to interview in

person the members of the next Legislature, and secure as many friends for the bill as possible. Thus far, replies have been received from over 300 physicians, promising their active support.

If the members of the profession in this State will interest themselves in this matter there can be no doubt of the adoption of the amendment next winter. The failure in the original bill, which placed it in the power of a few local politicians to defeat the will of the people and the evident intention of the General Assembly, should be remedied at once. The following are a few extracts from the Secretary's stirring letter:

"The existing law has been satisfactory in its working until the last year; fulfilling in every particular the intention of the law; that is, preventing the desecration of cemeteries and benefitting alike medical students, physicians, and the general public by furnishing the colleges a plentiful supply of material from the unclaimed pauper dead. The existing law is weak and deficient in the following particular: It is not mandatory—says *may* instead of *shall* when designating what bodies may be delivered to medical colleges; thus giving designing persons an opportunity to interfere with the intention of the law. * * * The only remedy is additional legislation. The accompanying draft of a bill amends the present law by, first, making it mandatory, and thus prevents any interference with its proper intentions, by a political clique, or other meddling persons. Second, giving preceptors as well as teachers in medical colleges the right to claim material for medical and surgical uses. Now, Doctor, knowing, as you do, the necessity for dissection and experimental operation, may we not rely on you to give what personal aid is in your power to advance the cause of medical education in and out of college, by making it a matter of personal interest; to call upon the members of your district and urge them to support the measure for the following reasons among others:

"First: The dissection of human bodies is absolutely necessary for the proper education of the physician.

"Second: Such being the case, the colleges must and will have human bodies.

"Third: There are bodies enough of those unclaimed and unknown persons who die in the institutions supported by public tax, to meet the demands of the colleges.

"Fourth: Consequently, the law is a protection to private cemeteries; for since the passage of the present law until this winter, public morals and decency have not been once outraged by the fiendish acts of the resurrectionist. Will you please advise me of the names and addresses of legislators whom you may see, with their opinions of the bill, that we may have some idea of the number of its friends in the next Legislature."

Every physician in this State, every one interested in the welfare of our profession and a higher and better medical education should give this bill his hearty support. Show the general public and politicians that doctors, though they differ at times, are a unit in what concerns the welfare and ultimate good of the profession.

We hope that every one of our readers residing in the State of Illinois will coöperate with Dr. Strong in his efforts to put this amendment on our statute books.

We call the attention of our readers to the list of Boylston prize questions, for 1885–86, among the advertisements. It is to be hoped that some of our readers in the West will gain one of these prizes, so rich in professional honors and pecuniary rewards.

DOMESTIC CORRESPONDENCE.

LETTER FROM BOSTON. *Death of Professor Ellis—Resignations at the Massachusetts General Hospital—Boston's New Sewerage System—Annual Meeting of the Massachusetts Medical Society—Posterior Plaster Splint—The Admission of Women.*

BOSTON, June 24, 1884.

You know that medical men are very fond of professional gossip, and had you lived in Boston for the last few months your appetite for medical small talk would have been satiated. What with changes in the Medical School and resignations at the Massachusetts General Hospital, we have been indeed amused. The first change was the irreparable loss by death to the Medical School, of Professor Calvin Ellis, who had for many years filled the Jackson chair of clinical medicine. Dr. Ellis' memory has been honored by a stated meeting of the District Society, and the encomiums there offered were eloquent and justly deserved. A man of simple habits, upright conduct in all the paths of life, a careful instructor, a trusted family counselor, and a highly valued consultant. He left a competency, the greater part of which goes to the Harvard Medical School. A worthy successor has been selected in the person of Dr. Robert T. Edes, the Professor of Therapeutics, who has been transferred to the chair of clinical medicine.

An unpleasant state of affairs has arisen at the Massachusetts General Hospital, where the two senior surgeons, Drs. Bigelow and Hodges, have tendered their resignations to the Board of

Trustees, owing, it is said, to the refusal of the Board to appoint as house pupil the candidate nominated by the majority of the staff. For years a feeling has existed that appointments at that institution in many cases were the result of favoritism, and the acceptance by the Board, of a minority report has been the "casus belli." It is thought that the gentlemen will remain, as the Trustees have already asked them to withdraw their resignations. Their loss to any hospital would be a great one, but especially is it to be regretted that men occupying the position they do in the profession should become involved in an almost personal quarrel, and feel it incumbent to resign in a huff. In justice to the gentlemen, let me say that it is generally conceded that they were right in the issue taken, but the principle of tendering resignations where one cannot have one's own way is wrong; and we retrospect upon our juvenile days when a cross in our play led us to exclaim, "I won't play!"

Our new system of sewerage which has been put in operation this year is working very satisfactorily; the city now has a system of sewerage second to none in the world, and which has been constructed at an expense of between five and six millions of dollars. The work was begun seven years ago, with the object of intercepting the sewage of the city as it flows in the existing sewers and conveying it to a point where it may be discharged with safety to the public health. The intercepting sewers follow the marginal streets of the city as far as practicable, that the sewage may be intercepted near the outlets of the old sewers. The new system allows the sewage to flow at all times, regardless of the condition of tide or weather. The entire sewage of the city is collected in a large reservoir covering several acres at Moon Island. This reservoir will be emptied twice in twenty-four hours, it being so situated that the ebb tidal current will sweep the sewage far out to sea.

The system was designed by a commission appointed by the city government in 1875, consisting of Mr. E. S. Chesborough, City Engineer of Chicago; Mr. Moses Lane, City Engineer of Milwaukee, and Dr. C. F. Folsom, Secretary of the Massachusetts State Board of Health.

The one hundred and third meeting of the Massachusetts Medical Society was held in Boston on June 10th and 11th. The morning of the 10th was spent in visits by the members to the various hospitals. At noon the society assembled at the new Harvard Medical School to witness experiments and a demonstration of "Modern Methods of Research in Physiology," by Professor H. P. Bowditch. The laboratories were shown, where experiments were in progress under the direction of Professor Bowditch's assistants. Following these demonstrations, Dr. Thomas Dwight, the new Professor of Anatomy, who has been very successful in his teaching the past season, then addressed the society on "Modern Methods in Anatomy," showing superb frozen sections and anatomical preparations prepared by corrosion and by the use of Wood's fusible metal.

In the afternoon Dr. George W. Gay gave a demonstration of the application of the plaster posterior splint in the treatment of fractures of the leg. This method is largely used in Boston, and I can heartily commend it. The advantages of the splint are, its applicability to all fractures of the leg. Possibly certain Pott's fractures, where there is marked lateral displacement, should be excepted. It is an adaptable shell of plaster of Paris which is made for each individual fracture. It can always be readily opened—in fact, is always open—so that the limb can be under constant supervision; hence there may be no fear from sloughing or gangrene, the result of unrelieved pressure. It holds the fragments firmly in position, and the fracture remains "put." It can be easily removed and reap-

plied without impairing its integrity. The fractured limb having been wrapped in sheet wadding, a piece of crinoline long enough to extend from the toes to above the knee and wide enough to encircle the limb, is laid beneath the limb and closely wrapped around it, with the exception of a space an inch wide on its anterior aspect. This serves as a pattern from which to cut eight or ten similar pieces. These are slashed from their edge inward, especially at the heel, to allow their adaptation to the limb. The outer layer of gauze, which is larger than the rest, is folded over on the inner layer, thus binding the several layers of gauze and plaster together into a common whole. A plaster paste is then made, which is interlaid between the various pieces of foundation gauze. The splint is now adjusted to the limb, a roller bandage is applied over this, and the splint is complete. In a few hours the outer bandage may be removed, the wadding cut up and buckled straps applied to keep up the desired compression.

At the conclusion of this paper the society was called to order by President Hosmer. After a rather stormy discussion and a lamentable display of ignorance of parliamentary law by both President and Fellows, by-law I. was amended to read as follows: "Candidates for admission into the Massachusetts Medical Society may be either *male* or *female*, and every candidate must by proper credentials and examinations satisfy the censors of said society that he possesses the following qualifications, etc." Thus the question of the admission of women to the Massachusetts Medical Society is settled. At the meeting of the society three hundred and thirty-two members out of fifteen hundred and twenty-nine were present, of whom two hundred and nine voted to admit women and one hundred and twenty-three against their admission. At the Councilors' meeting, of one hundred and ten present out of one hundred and

seventy-two Councilors sixty-three voted in favor of admission of women and forty-seven against it. The action of the society places it on a more favorable footing with the laity, whatever the judiciousness of the movement may be. Accepting that a certain number of well-educated women will practice medicine, that the State in chartering the Massachusetts Medical Society intended it to act as a licensing body, and that a widespread public opinion demanded their admission, the Censors of the society could not long have refused to consider a female's qualifications for admission to the Massachusetts Medical Society. The annual dinner passed off with unusual brightness under Dr. George B. Shattuck, who acted as anniversary chairman. Dr. Charles D. Homans, the President-elect, suggested that the present scene of the anniversary banquet might, with the advent of women into our ranks, be changed in twenty or thirty years to a ball-room. Let me say, however, that the general impression is that there will be hardly a "baker's dozen" who desire to enter the Massachusetts Medical Society.

B.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

PUERPERAL FEVER—FRACTURES—THE GREATER TUBEROSITY OF THE HUMERUS, EXTENDING INTO THE BICIPITAL GROOVE.

A regular meeting of this Society was held on the evening of May 5th, 1884, when papers upon the above topics were read. The first, on "Puerperal Septicæmia and Prophylaxis of Puerperal Inflammations," was ably presented by Dr. G. F. Lydston, wherein he differed from a number of eminent writers on these subjects. The paper is some seventy odd pages in length, written on legal cap, and consumed the greater part of the evening's session. Below will be found a somewhat brief extract, for to dwell upon the merits of this lengthy article in detail would require more space than we can in this issue devote to it.

After reviewing with some vigor the discussion of "Puerperal Fever" that has appeared during the winter in an Eastern journal, and that of the New York County Medical Society, as well as the admirable essays upon the subject by Drs. Thomas and Garrigues, the writer asks, What is puerperal fever? To define this, he added, is a most difficult problem. Referring to the descriptions of Leishman, Hervieux and Lusk, how widely different are their definitions, described at intervals extending over a period of ten years. Barker states that puerperal fever is an entity. This definition, of course, is stripped of its superfluous and obscuring elements, all of which is denied by Lydston; and whether "septic" or "specific" puerperal infec-

ion "be the assumed common cause in puerperal fever (*i. e.*, transposing his ideas), to assume that diseases which may occur from numerous and most diverse causes in the non-puerperal female should change and become suddenly specific" is illogical. To enumerate them all and their multiplicity would be an act of supererogation in this condensed report, nor shall we attempt doing so at this time.

The writer did not, however, wish to be understood as advancing any arguments in favor of ignoring the danger of septicæmia, but simply of offering a protest against what he was pleased to term the "septophobia" prevalent in some quarters. In other words, he defined his position as midway between the two extremes of practice. Through the medium of the placenta there is a constant interchange of nutritive and waste materials between the vascular systems of the mother and child. The former is far in excess of the latter, and is a physiological necessity. In this process of osmosis the fluids are chiefly towards the child. At birth, however, all this is changed, and the osmosis is in the direction towards the maternal circulation. The afferent current is checked, and the lymphatics and veins of the mother are more active than ever, as it is mainly through them that the retrograde metamorphosis of tissue occurs, which is the essence of physiological uterine involution; or, as is described later in the paper, the function of the lymphatics and veins of the puerperal woman is to remove those nutritive materials which by the removal of the fœtus have been rendered unnecessary. That a large amount of waste material is thus removed is evidenced by the peculiar character of the colostrum. This, rather than the patulous condition of the uterine sinuses, is the most important physiological circumstance favoring septic absorption, for with the products of retrograde metamorphosis of tissue we are likely

to have absorbed the products of putrefactive changes. The so called "milk fever" may also be ascribed to this cause. It is not necessarily injurious, as experienced obstetricians have lately stated; and *Lusk* states that round micrococci are the necessary casual element of true septic fever. This, if it be true, agrees very well with the views just advanced. Lydston's belief is that milk fever is simply due to hyper-activity of the nutritive functions, resulting from the sudden introduction of an excessive amount of nutritive material into the circulation. It will be observed that the fever lasts only until the excess of material has had time for elimination, chiefly through the selective action of the mammary glands. Of course, it must be admitted that if products of putrefaction be also introduced, the rise of temperature and danger of eventuation in septicæmia will be proportionately increased. * * * Pale, weak, anæmic women are most liable to develop septicæmia, while more robust women if sick at all, are most likely to be attacked by some variety of local inflammation. Yet should the latter have the clinical characteristics of a typical case of the disease, the origo mali in the first case cannot be the same as that of the second, and the two forms will depend upon widely different causes, in spite of the theory of the common cause, "septic absorption." Hypothetical typical cases of "puerperal fever," "local inflammations," with moderate and quite intense fever, etc., were clearly illustrated and graphically described in a few succeeding pages of the paper; where one woman that has passed through labor is a victim to toxic infection, whilst the other, who is plethoric, is markedly predisposed to inflammation; the one, whose tissues do not want an abundance of nutritive pabulum; the other, whose tissues fairly crave supplies of new material, and who, practically speaking, is a huge sponge, ready for the absorption of any

materials of an organic nature. These conditions of debility favor unhealthy and putrescible secretions.

The writer was inclined to believe that septicæmia may occur from the absorption of fluid from which bacteria are absent; sepsin in its results differs not at all from snake virus, and its destructiveness depends in a great measure upon local and constitutional conditions in the affected individual. In "pyemia," however, which is but one grade of "septicæmia," bacteria must necessarily be present. In certain cases of mild febrile attacks following child-birth, it may be simply a traumatic fever. This, while often due to septic absorption, may also be due to nervous influences, or traumatic fever resulting from nutritive disturbances (as shock), which is due to excessive reaction following nervous depression. Shock also may be due to the use of instruments. Malarial fever may also come on in the puerperal state. Certainly, then, septic infection may not be present in any of these instances, and yet the case be diagnosed as septicæmia. In certain cases of septic infection following labor, we have diffuse suppurating abscesses, differing little, if any, from "pyemia" that may follow surgical operations; but the characteristic temperature curve is exceptional in the former, which is present in "pyæmic" fever. This form of puerperal septicæmia is sometimes very chronic, resulting in gluteal abscesses; and even secondary suppurative processes have been found (by himself) at the autopsy in the liver and kidneys. The causal element of the phases of the diseases usually termed respectively pyæmia and septicæmia, is the same, but the former is a misnomer. In one we have the formation of thrombi, which contain micrococci, and which, becoming detached, enter the circulation until they lodge and form new foci for suppuration, etc., while in the other no thrombi are formed, or if formed become so rapidly and tho-

roughly disintegrated that secondary suppurations do not result. Comparative illustrations were then given why metastatic abscesses cannot result from dissecting a wound which is septicæmic. In a general way, the formation or non-formation of thrombi depends upon the intensity of the infection and the local and constitutional conditions present. Metastatic abscesses are quite exceptionally seen in the puerperal state. This may be due, in part at least, to the fact that the patients are so speedily destroyed by the intense infection characteristic of puerperal septicæmia. Thomas goes to the extreme of attributing all puerperal disorders to the absorption of septic poison; and, in further quoting that author, according to the writer, it matters not whether the disease be a phlebitis, cellulitis, lymphangitis, or peritonitis, the essence of the disorder is the absorp- of poison into the blood of the puerperal woman through some solution of continuity in the genital tract. * * * How about exposure as a cause? Phlebitis following labor may give rise to the disease known as phlegmasia dolens, and may result from trauma, especially if exposure be superadded; or it may arise from simple thrombosis, occcuring independently of bacteria or septic processes, in the same manner as cellulitis may arise. * * * A "locus minoris resistentiæ" may be afforded; and the woman being especially susceptible to cold and depressing influences of all kinds, it remains but for an exposure to a draught of air to light up an inflammation of the uterus, constituting a metritis, or a pelvi-peritonitis, or cellulitis. The simple passage of a sound into the non-pregnant uterus has been known to produce pelvic inflammation, severe cellulitis, etc. A rapidly fatal general peritonitis has also been caused in the puerperal woman by simple extension from the pelvic peritoneum. In these cases, if septicæmia occur at all, it is secondary to or a complication of the inflammatory

affection. Considerable space was allotted in the paper to illustrate the probably fallacious reasoning of those who affirm that septicæmia is the term including the "many synonyms" of disease to which the puerperal woman is liable, when Parry's classification of these disorders was given, the principal feature of which consists in fever, with its various concomitants. Now, as this is also somewhat dogmatic and arbitrary in its division, yet it is often sufficiently practicable to enable us to recognize the existence in different cases of the affections named. Lydston, however, suggested a modification of Parry's classification which he thinks will enhance its accuracy. Regarding his suggestions, we will mention that only two should be classed "specific," and pyemia should be omitted altogether.

Before closing the review of this portion of the article, we wish to state again that Dr. Lydston does not deny that puerperal peritonitis is undoubtedly often septic in origin; but he emphatically insists that it is not always so, and that there is not a characteristic "septic peritonitis." * * * Regarding the conversion of the poison of the exanthemata into a "specific puerperal poison," the writer states it is absolutely impossible, for the reasons explained in the paper. The "unity" of the "materies morbi," the apparent interdependence of the poisons of different diseases, were to some extent forcibly impressed by the writer's citation of numerous cases and the variations dependent upon sanitary surroundings, etc. Considerable space was devoted to the diphtheria of puerperal wounds and puerperal erysipelas. The former, happily, is not of very great frequency, and it has the possibility, or a strong probability, of parasitic origin along the genital tract. The latter disease, however, may be located remote from the genitals, the same as in non-parturient women, a number of instances of which were given. Some cases of erysipelas were

also given which could be traced to no other cause than cold and exposure to dampness, apparently independent of possible contagion.

Regarding prophylaxis of the puerperal diseases, added the writer, bi-chloride of mercury, antiseptic pads, and injections, with bare walls, floors, and other surroundings needed in small pox and typhus fever, are not a necessity in the lying-in chamber. In private practice, almost non-interference can be carried out, but under the present system of hospital construction this plan can rarely be so absolute.

Several pages were devoted to giving his experience while resident surgeon at Charity Hospital, New York, at Maternity Hospital, etc., and statistics which, compared with those given by Dr. Garrigues, do not well correspond with the latter.

From August, 1880, to December, 1880, there were confined in Maternity proper 50 selected cases; of these, five, or 10%, died of puerperal metritis, septicæmia, or peritonitis. In the waiting wards during the same months, there were confined 72 cases, also selected; of these, six died, only three of which, or about 4%, died of septic infection. During October and November, the writer delivered in the waiting wards alone 25 women, of whom one died, and she of extensive heart lesions and pulmonary œdema. During these same months, 30 out of the 50 cases cited from the Maternity records, five fatal cases occurred, making a mortality for the two months of 16⅔% from septicæmia at the Maternity proper.

In 1875, the first year of the occupancy of the Maternity Hospital, there were 570 deliveries, with a mortality of fifteen, or 2.67%. In 1881, the mortality fell to 2.36%; in 1877, it rose to 6.67%, the reasons of which were elaborately dwelt upon.

During the service of Dr. B. Wood at the Maternity, of 68

cases there were three deaths from all causes. In the next two months, of 62 cases three deaths occurred, one of which was due to septicæmia. The grand total for the waiting wards and pavilions from August, 1880, to April, 1881, was 202 cases, with a mortality of twelve, only five of which, or a little more than 2½% were due to septicæmia, or puerperal fever. Of 130 cases, the writer stated, the let-alone plan of treatment was more rigid than his own, vaginal injections not being allowed. From April, 1881, to April, 1882, 423 cases were delivered, with but two deaths from puerperal fever. The treatment of this series was also non-interference. On the other hand, the writer stated, he has seen the temperature rise and pelvic inflammations follow the use of frequent vaginal injections; and cases which may eventuate in puerperal septicæmia and lead to a fatal issue would often do well and make a perfect recovery if left alone and kept quiet and free from curious visitors. As for prophylactic intra-uterine injections, the man who uses them will sooner or later come to grief in making too general use of this procedure.

"Placental compression," or Crede's method, of "pressing it out," is almost invariably absurd and pernicious. No more harm or serious result is likely to arise at the present time from a few minutes retention of the placenta than there was centuries before Crede was ever heard of. Without wishing to underrate the importance of freeing the womb from putrescible substances, the writer deplored the practice of inserting one's hand into the uterine cavity, seeking for an imaginary piece of placenta or for portions of secundines of microscopic size.

Another, yet more clear, illustration of the advantages of the non-interference plan of treatment in obstetrical practice was cited while the writer acted in the capacity of Resident

Surgeon of the New York State Hospital for Emigrants, where the deaths occurring from septicæmia were at the minimum. A year since a so-called "reform" was instituted there in the emigration service; the prophylactic injections and complicated manipulations were introduced, and with the direct and immediate effect of increasing the mortality rate, which became alarmingly high. Simultaneously, upon Ward's Island, there were present a large number of Russian Jewish refugees, who were filthy and mentally despondent. Upwards of ninety of these women were delivered without a death. There were numerous forceps deliveries, but there was absolute non-interference in the after-treatment. Here was a good opportunity to compare fancy midwifery results with the let-alone method.

Primary Operation for Perineal Lacerations.—In severe lacerations the primary operation is very essential, and often productive of the best results; but the tendency is towards too much routine practice in this respect, especially in hospitals. Those of less degree will heal of themselves. Chromated catgut is probably the best material for sutures to be used in deep and extensive lacerations which it is desirable to repair at once, and thus diminish the surface for septic absorption; but if a laceration extend completely into the rectum the tendency is to the secondary in preference to the primary operation. Meanwhile, cleanliness and iodoform are the most important elements of treatment. In some cases the slight fever resulting from the sutures is likely to pervert the secretions and convert them into a favorable nidus for the development of bacteria. In general, the operation is very successful if properly performed. Instrumentation or passage of a catheter at frequent intervals is unnecessary. A bed-pan should be used, and a stream of iodized water from a fountain douche allowed to flow over the vulva during urination. Iodine is a

more efficient deodorizer than carbolic acid, being destructive to bacteria in a strength of 1 to 5000. Bichloride of mercury, if used, should be in very dilute solutions, and in view of its chemical action in forming albuminates its superior usefulness may be questioned. A few other general suggestions for this accident closed the succeeding few pages upon the primary operation.

Injections During Labor.—This is recommended by some of our antiseptic extremists.

Lydston's remarks condensed were—they are not only useless, but injurious, and all unnecessary manipulations, as introduction of the hands frequently within the rima vulvæ is prejudicial to the safety of the patient; and only that which is consistent with careful watching of the case should be attempted.

Tardy Delivery.—The use of the forceps at the second stage, and care in changing of linen of the patient, first by warming it, also the bed-pan before placing it under a patient, received full attention by the writer's pen.

Administration of Ergot.—This drug is undoubtedly prophylactic in puerperal diseases, for it produces uterine contraction and hastens involution. In fuller subjects and after severe or instrumental deliveries, give small doses of the drug with quinine for a week or ten days. Hour-glass contraction should be carefully guarded against before the placenta has been expelled, although this condition is rare. After labor, a pad of oakum placed over the vulva is much neater than a napkin. The potency of germs and the value of antiseptics are well appreciated, but the woman should now be interfered with as little as possible. We should regard labor as a physiological process rather than as pathological. Women are to-day entitled to the same natural advantages that they were long before syringes, antiseptics, and microscopes were ever dreamed of, although

when fetor or suppression of the lochia indicates danger, intra-utrine injections and other hygienic measures are demanded; and in these severe cases a glass tube after being introduced may be left in situ until danger is passed. Even constant irrigation may be advisable. Jones, of St. Paul, has recently reported several interesting cases in which they were useful. Sloan recommends suppositories of iodoform and eucalyptus. Curetting would not be proper except where portions of secundines were known to be left. The success, also, of the iodine treatment in typhoid fever ought to be a good basis for its use in septicæmia. Also antipyretics—as the salicylate of iron is almost specific in its action, this will often rapidly lower the temperature where quinine has failed. Then a judicious use of morphine and stimulants, with good nourishment, constitute (generally speaking) the proper management of puerperal septicæmia. The hot vaginal injections to be effectual should be given through a cylindrical speculum. The faradic current was spoken of as one of the best remedies to induce resolution of pelvic exudation. * * * General peritonitis complicated by septicæmia is the most fatal disease to which the puerperal woman is liable, the vital powers being overwhelmed by a most powerful poison. The treatment suggested for septicæmia comprises the measures already stated, in combination with very free use of opium or morphine or stimulants. Hot applications over the abdomen, or perhaps cold, may be a useful measure in this fatal malady and the support of the system in its efforts to rid itself of the poison already absorbed. About six pages of goodly advice to our esteemed bacteriophobic friends in the East, and to those having direct charge of Maternity Hospital, eloquently closed what probably is one of the most comprehensive papers upon a single topic ever presented to this Society. Many valuable formulæ and interesting

points in this review have been unavoidably omitted, although their merits may receive further attention at some future time.

Fracture of the greater tuberosity of the humerus, extending into the bicipital groove, was the subject of a paper read by Dr. F. C. Schafer, who simultaneously presented the case of a man 55 years of age suffering from this rare form of fracture. As the paper is not at our command, the following abstract is made from memory. Two years ago, the patient received an injury to his shoulder by falling forward from a height of only about three feet, resulting in fracture of this uncommon variety. The various fractures and dislocations of the joint were enumerated, and the characteristics of this lesion were given as follows: A flattening of the shoulder and an increase in its antero-posterior diameter, will at first suggest that there is a dislocation to deal with. This flattening is caused by the drawing backward of the fragment of bone by the attached muscles and consequent crowding forward of the head of the humerus. The displacement leaves a deep sulcus in place of the bicipital groove. However, crepitation confirms the diagnosis. After the subsidence of the inflammation consequent to the injury, there was partial fibrinous anchylosis of the joint, which was with great difficulty broken up. At the present time, upward and backward extension of the arm is but slightly limited, as was demonstrated by the mobility of the limb. The alteration in shape of the upper part of the bone is evident on palpation only, and is barely perceptible to the eye, even when we attempt to manipulate the joint. The patient being somewhat fleshy, precludes any exterior signs of deformity. There has been almost perfect recovery resulting from the form of treatment devised.

In conclusion, the speaker cited several cases of this variety of fracture, in which the diagnosis had been confirmed by

autopsy. Perhaps not more than ten cases of this fracture are on record. The patient was then examined by the members present, and its peculiarities informally discussed.

Owing to the late hour, and the fact that a number of members experienced surgeons and obstetricians had gone to Washington to attend the American Medical Association, the discussion of the papers was postponed until a future meeting.

A motion prevailed that the Society do adjourn.

L. H. M.

SELECTIONS.

GUN-SHOT WOUNDS OF THE SMALL INTESTINES. *By* CHARLES T. PARKES, M.D., *Professor of Anatomy in Rush Medical College, Chicago, Ill.*

[*Address of the Chairman of the Section on Surgery and Anatomy.*]

Mr. President and Gentlemen of the American Medical Association: The subject-matter of the remarks to be presented this morning was suggested to me by an article published in the *British Medical Journal* in 1882, from the pen of "that good man among men, and great man among doctors," J. Marion Sims.

The article in question was an appeal for operative interference in penetrating gun-shot wounds of the abdomen, in lieu of the "expectant treatment" so universally accepted and adopted by the profession, and which, in a few seemingly well authenticated instances, has led to recovery.

The appeal was uttered in behalf of the vast majority on the side of fatality attending these cases, and was based upon the deductions to be drawn from the recoveries following operations for diseases affecting the viscera of the abdomen and pelvis, during which the most terrible injuries have been inflicted upon the contents of these cavities—the peritonæum exposed for hours, as well as brought in contact with all kinds of foreign and usually irritating substances.

It is scarcely necessary for me to affirm in your presence the fact that, with few exceptions, the older writers and surgeons

advocate the "expectant treatment" in the management of these injuries, while the younger writers and surgeons favor operations, pinning their faith upon the wonderfully favorable results attending the practice of Listerism, the purest of antiseptic surgical methods.

During the past few months I have instituted and carried out, with the valuable assistance of Mr. J. McDill and Drs. Anthony, Freer and Bolles, a series of experiments for the purpose of ascertaining the results to be obtained by immediate operations after these wounds, with the hope that the relation of the attending circumstances and events would be interesting as well as useful, by adding to the data now in our possession other data, from which may be determined more intelligently the course of action to be adopted when these cases come under our charge for treatment.

No attempt will be made to review the great question of penetrating gun-shot wounds of the abdomen, which would lead me beyond the scope of the paper. Nothing but a fair recital of the history of the experiments, with some application of the conclusions to be drawn therefrom, will be undertaken. With this intent in view, there will be presented to you the accompanying phenomena, the manner of treatment and results of thirty-seven intentional gun-shot wounds of the abdomen, confining my attention entirely to my own observations, and exhibiting to you such specimens as I have been able to preserve, taken from the animals; both of those which died, and of those which were sacrificed, after recovery, to obtain the specimen. Experiments of like nature have been made upon animals by very many surgeons, previous to the application of their convictions of the necessity of certain procedures to relieve disease or the effects of injury on the human body.

No preparation of the animals selected for experiment was

made, either as to choice of physical condition or surrounding circumstances, except that they were anæsthetized previous to being hurt. The wounds were produced by the ordinary Smith and Wesson revolver of 22, 32, 38 and 44 caliber, and by the 22 caliber rifle. The shots were given at short range, so the damage done by the bullet fairly represents the injury met with, either in military or civil practice, as the results of shots from the firearms now in use.

At first, no attempt was made to give a definite direction to the course of the bullet, other than that it should perforate the abdominal cavity. The results soon confirmed the fact so well known, that the larger number of patients suffering from such wounds never come into the hands of the surgeon, their injuries proving rapidly fatal.

This ending, we can readily understand, must be a common one, when we bear in mind the construction and nature of the viscera contained in the cavity, especially their great vascularity, having vessels of immense size supplying them with, and carrying away from them, the blood necessary for their nutrition and the performance of their special functions; not to mention the main systemic artery and vein coursing through the cavity in a position rendering them readily liable to perforation, death following speedily.

It was also ascertained that a severe perforating and lacerated bullet wound of the viscera, such as of the kidneys, of the spleen, and of the pancreas, could not apparently be treated successfully in any other way than by an absolute removal of the injured organ; and notwithstanding the reported successful removal of almost every important organ of the abdomen by one surgeon or another, the conclusion was reached that some of these organs must be left *in situ*, in order that the functions of life may be carried on.

Hence we were compelled to exert such control over the course of the missile as to have it produce a wound of the nature of those likely to come, and actually coming, under the care of the surgeon; so that the injuries became those confined to perforations and injury of the intestinal tube, with occasionally the injury of some of the larger special organs.

It will not be amiss to recall to your minds, very briefly, some of the triumphs of abdominal surgery, and more especially to impress the fact that shot wounds of the cavity and contents present many questions of prime importance which are not met with in, and do not complicate, ordinary operations for disease or injury with any free, external wound.

The removal of the spleen for acute wounds nearly always results in recovery; so also one kidney has been removed successfully, either for disease or injury, often enough to place the operation of nephrectomy among the list of justifiable undertakings.

Again, wounds of the intestinal tube of all degrees of severity, up to complete division by the resection of portions of the entire caliber thereof, have been successfully treated by surgeons, as is proved by the experimental researches of Dr. Traverse, the eminent Prof. S. D. Gross, Dr. Bell, and others, and confirmed by the experience of many surgeons during operations upon the human being for diseases of these cavities. Still, in each of the examples mentioned, the circumstances were entirely different from what is found present in perforating gun-shot wounds of the abdomen. In the former, the peritoneal cavity was clear of blood and other extraneous substances; the prevention of their entrance entirely under the control of the operator. In the latter, blood in large amounts was always found present; and the peritonæum was smeared with the contents of the intestinal tube, necessitating prolonged

efforts to secure a cavity clear of all hurtful substances. Of necessity, the latter cases would be least likely to escape the probabilities and dangers of subsequent inflammation of the serous membrane.

Primary resection of portions of the intestinal tube, or entire removal of separate organs, are operations comparatively easy of performance, and are not necessarily attended with any damage to or exposure of any other portions of the abdominal cavity, outside of the immediate proximity of the site of the operation.

Extravasation and hæmorrhage should be entirely prevented and controlled; and the peritoneal sac can be maintained perfectly clean during the time of, and after, all the procedures required by the operation.

After gun-shot wounds, besides the resection or removal of any special organ required, there is great shock, and prolonged manipulation is necessary to obtain a proper cleanliness.

The recital in detail of each experiment would be tiresome and occupy too much time, so that your attention will be called only to the more important facts and circumstances determined by them.

There will be published with the paper a somewhat extended account of each experiment, from which individual inferences may be drawn. In addition, a short *resume* of the entire work will be given further along.

First comes the question of hæmorrhage and damage to blood-vessels, as this is primarily the most common and certain cause of death, and demands the surgeon's first attention. In its excessive amount, occurring rapidly and suddenly, is to be found the explanation of the cases which are immediately fatal. This result will surely happen when the largest arterial trunks are severed by the bullet; further, its copiousness and persist-

ency of flow, even when none but very small blood-vessels are divided, involve a matter of serious concern, if not a fatal issue, either from the amount of blood lost, or in predisposing to septic processes from blood decomposition.

There is a remarkable persistency in the flow of blood following the severance of vessels in the abdominal cavity, perhaps dependent upon the laxity of the tissues through which these vessels course, the absence of pressure from surrounding soft parts, and the lack of the peculiar influence of the atmosphere, either from its weight or clot-producing power.

When the abdomen is opened immediately after the transit of a bullet, its cavity is found to contain a large amount of blood, the quantity, of course, being in proportion to the size of the vessels wounded, but always a disproportionately large amount, no matter what their caliber; further, the flow is still going on from vessels of all sizes. There seems to be slight disposition to the formation of an obstructive clot in the mouths of the smaller ones, and slow retraction or contraction of the walls of the larger.

Bleeding stops only when the heart ceases to beat in a faint from excessive loss, or when the amount of blood is so large that by its bulk, and weight, and distension of the abdominal walls, it makes pressure sufficient to occlude the open vessels.

The conditions are very quickly altered after air is admitted through the abdominal section. Clots rapidly seal up the smallest vessels; the smaller arteries spurt less forcibly and soon cease beating; the larger ones contract and retract, just as occurs in the wounds of soft parts in other regions of the body. This is in accordance with, and corroborative of, the experience in hæmorrhages occurring in abdominal surgery in the human being. Few of us have failed to see cases like this: a patient dies suddenly, with all the symptoms of

acute prostrating hæmorrhage; post-mortem examination shows the abdominal cavity filled with blood; the blood is carefully cleared away in the search for the source whence it came; and when this is found, it is a matter of astonishment that such a vast amount of blood could come from so small a vessel. Perhaps it is a small vein of the ovarian venous plexus, or a minute vessel in the thin-walled sac of an extra-uterine fœtation, or the partially closed vessels in the shrunken stump of a recently removed ovarian or other tumor, or some recently divided adhesions, all of them vessels which, in any other part of the body, would be no item of concern to the surgeon, or need any of his special care to prevent bleeding from them.

The lesson taught by these facts is of imperative importance in all operations upon these cavities; and even if mastered, loses nothing by reiteration. Excessive hæmorrhage being certainly the principal cause of speedy death in severe gunshot wounds in this region of the body, where evidences of its presence are plainly exhibited, there can be no hope whatever of saving the lives of any of the wounded except by immediate abdominal section. This alone, by admitting air quickly, staunches the fast flowing current, and gives time for the application of the ordinary rules of surgery for the prevention of hæmorrhage.

In order to be safe from subsequent trouble, every divided blood-vessel must receive the surgeon's attention, occluding clots must be thoroughly sponged away, and in their stead must be placed the ligature or the sear of the actual cautery. If left without this restraint, and the abdominal opening be closed, the same conditions are restored as existed previous to the section; and as reaction comes on, bleeding will surely recur, and in large amount, leading to death from this cause alone, or furnishing a frequent source of septicæmia.

This fact again is corroborative of the experience of ovariotomists, the most successful being those who take the greatest pains to staunch all bleeding before closing the abdomen.

Following a resection of three or four inches of bowel and a ligation of two large subdivisions of the mesenteric artery wounded by the bullet, there occurred a mortification of several inches of the entire intestine above the site of resection. The mortified part corresponded with the distribution of the arteries wounded and ligated. This assuredly was an important fact to know, if at all likely to occur as the result of wounds of these arterial branches; even its accidental occurrence is a circumstance to be remembered. Its occurrence would surely add largely to the gravity of the cases in which it happened, probably necessitating a resection of a portion of the intestine corresponding to the area of distribution of the wounded vessel. The great freedom of anastamosis between the mesenteric arteries rather argues against their wounds being followed by any such hazardous result; still, the case recorded above required explanation. Two experiments were performed in order to determine whether destruction of the arteries alone was sufficient to lead to such mortification.

Both demonstrated that a closure of two or three of the largest subdivisions of the main mesenteric vessel was not in itself sufficient to produce death of the portion of intestine supplied by them. The experiments were as follows: an animal was anæsthetized, and the abdomen opened. A sufficient length of bowel was drawn through the opening to allow of the ligation of two large sets of vessels adjoining each, the ligatures including vein and artery. The parts were returned to the abdomen and the latter closed. At the end of thirty-six hours the wound was reopened. No very noticeable change was found in the intestine; pulsation had returned in the ligated

vessels beyond the ligature. The external wound was again closed. The animal recovered in a few days so as to be as lively as ever.

A second animal was etherized, and a ventral section made. Three large vessels were ligated (veins and arteries), before their division into any branches. These three vessels lay parallel with each other. A ligature was also thrown around the anastomosing branch near the intestine which connected with a fourth larger vessel. There followed immediately very marked whitening of the bowel. The parts were returned and the wounds closed. The animal recovered promptly from the effects of the ether and the immediate effects of the operation.

It remained quite well for six days, when it grew ill. The wounds were reopened. Pulsation had returned beyond the ligature. There was no sloughing or mortification of the intestine. It was congested slightly and seemed paralyzed, and was of wider caliber opposite the distribution of the ligated vessels; this was the only change. There was a great deal of very offensive matter in the peritoneal sac, and notwithstanding the high grade of inflammation, there was no adhesion of intestinal folds except at one point. Here there was found a perforation of the intestine. Out of the opening there protruded a piece of wood which, upon being pulled out from the cavity of the intestine, was found to be four inches long, and connected with a large mass of twine. This had evidently been swallowed by the animal, and had gotten along safely enough until it reached the inactive portion of the tube corresponding to the seat of operation, where it was forced through the tube by the strong contractions behind it. Unfortunately, the animal was killed by the ether during the examination. Aside from this accident, the animal had a good chance of recovery.

The complication of a complete resection of the bowel, with

a ligation of two or more vessels, is the only explanation to be given of the case where mortification occurred. The experiments prove that such result does not follow simple closure of the vessels by ligation.

The second item to be considered refers to the course of the bullet and the character of the damage done by it. Nothing can possibly be more uncertain and erratic than the track of the missile through the body. A contracting muscular fiber, an edge of fascia, the elasticity of the skin, a surface of bone, or a distended knuckle of intestine, each and all of these at times present obstructions sufficient to divert it from the direct line of its flight. It is certainly astonishing what very extensive and severe lacerations of the intestines are produced by so small a bullet as one of caliber No. 22, Fig. 1. c.; the entire circumference of the bowel at some points being mangled beyond recognition; again, it is equally surprising how minute are the perforations made by the large No. 44, Fig. 2. As a rule, the larger the caliber of the bullet the larger the wound.

Figure 1.

An estimate of the direction of transit, based upon the points of entrance and exit, is purely conjectural, and furnishes no standard whatever by which we may judge of any supposed injury to any organs known to lie in such course. In one experiment, the bullet made four openings through the abdominal walls, and did no damage other than contusion of two knuckles of the small intestine and gouging the serous membrane.

The animal had a remarkably deep furrow along the course of the "linea alba." The bullet entered the right side of the ab-

men obliquely, two inches from the mid-line, perforated its walls, and coursing to the left, furrowed the peritonæum in its passage; was evidently deflected outwards, immediately before reaching the linea alba, by a knuckle of intestine, which it contused slightly.

Here it made its first exit through the walls, passed to the left side of the mid-line, again perforated the abdominal walls, and, furrowing the peritonæum upon the left side, finally made its second exit through the abdominal walls three inches to the left of the linea alba. Near its place of final exit, a second knuckle of intestine was found badly contused. The contusion was so severe and extensive that it was thought best to resect a length of one inch. The animal recovered.

In a second instance, the bullet entered the cavity about two inches to the right of the linea alba, on a line with the umbilicus, with a direction upwards and to the left side. It made its exit nine inches to the left of the mid-line, and just at the lower edges of the last rib. On opening the abdomen the stomach was found greatly distended, entirely concealing the other viscera from view, and presented two large perforations in its walls about two inches apart, from which some blood, mucus, and food were found running into the peritoneal sac. The wound to the right, in the stomach walls, was the smaller, and situated directly opposite the entrance perforation in the abdominal wall, having the same direction. The wound to the left in the stomach walls (two inches to the left) was the larger, very ragged, and had evidently been made by the bullet deflected forward at its first entrance into the stomach. After leaving the stomach the bullet impinged upon the inside of the abdominal walls just to the left of the mid-line, and then, instead of perforating them at that point, was again deflected upwards and to the left, merely furrowing the peritonæum along the remainder of its course to the point of exit mentioned. The

wounds of the stomach were inverted, as it were, into the cavity of that organ, by bringing its peritoneal surfaces surrounding the wounds in contact with each other by means of the continued catgut suture. The abdomen was carefully cleansed of blood, etc., and the wounds in the walls closed in the ordinary way. The animal speedily recovered from the injury, without any uncomfortable symptoms. During the recovery from the effects of the ether, the animal vomited considerable quantities of blood, giving an additional evidence of the perforation of the stomach.

There were two cases in which the bullets perforated the abdominal walls, and in their transit did no injuries to the viscera, in which the points of entrance and exit were five and six inches apart. In each instance the only damage done was a furrowing and laceration of the peritonæum along their entire courses, the blood from the track of injury falling into the abdominal cavity. In one experiment, the bullet failed to penetrate the abdominal walls and was subsequently dissected from between the muscles. On opening the cavity, quite a rent was found in the spleen opposite to the seat of external bullet wound, from which blood was freely flowing. There was neither abrasion nor perforation of the peritonæum. This case may suggest the probable cause of death in some fatal cases from non-perforating wounds. The laceration was evidently caused by concussion alone.

Other instances might be cited to illustrate the exceedingly great uncertainty as to the course taken by the bullet, and as to the organs probably impaired. They would also confirm the possibility of perforations of the walls without accompanying injury to the contents of the abdomen. Still, no instance was shown of failure to produce a wound thereof when the bullet's course lay among the intestines. Their safety followed deviation by glancing.

Figure 2.

The wounds of the intestines may be many in number and situated very near to each other (Fig. 3) so that one resection including all the openings will constitute the only operation that furnishes relief.

Again, the openings may be few in number and widely removed from each other; and if each wound is large, and the damage to the tube extensive, such as is usually produced by a 32, 38 or 44 caliber bullet, three or four resections are necessary. The latter are the most difficult cases to manage and most fatal in their results. The position of the points of entrance and exit of the bullet in the intestines is subject to immense variety, even in simple cases. It may involve only the top of a knuckle of intestine, merely opening the cavity thereof. The points may be so near each other that only a half inch or less of intestinal wall separates them from each other. (Fig. 1, a.) The bullet may merely cut off the mesenteric junction opening into the cavity more or less freely. The intestine is often perforated transversely near the middle, or longtitudinally; in the latter case the bullet, entering at one point, courses along in the cavity of the tube for some inches, and then makes its exit.

Figure 3.

All of these varieties depend upon the situation of the intestinal folds with reference to each other at the time of the transit of the bullet. One case

showed 10 complete perforations in 18 inches of length of the ileum, Fig. 3.

Extravasation of the contents of the tube was present in every instance where there existed the slightest degree of perforation. These contents were forced out into the peritoneal cavity, or on to the surface of the intestines, if the wound was large, by the bullet itself, and the normal tonic contractions of the bowels; and, if small, perhaps by the latter alone. This facility of extravasation agrees with my experience in wounds of the intestine in the human being. I have personal knowledge of two instances in which the medium-sized aspirator needle was employed to relieve tympanitic distension of the tube with success so far as getting rid of the gas was concerned, and giving great temporary comfort to the patient. Death ensued from the disease. Post-mortem examination in each case demonstrated the presence of fæcal extravasation at the seat of the needle puncture. It would not be an arduous task to collate instances of this accident in the practice of others, where this plan has been adopted. It is difficult to understand how any other result could follow a perforation, if there be contents at the seat of the puncture, when we remember how strong and constant is the action of the circular muscular fiber. It is stated that the protrusion or eversion of the mucous coat, which ensues very rapidly after complete division of the walls, acts as an immediate stopper of wounds of small size, say one-eighth of an inch in diameter. This may be true in incised wounds, but it was not shown to exist in a single one of the several hundred perforations coming under my inspection as made by the bullet. The latter tears away and lacerates the parts through which it passes, and perhaps paralyzes the muscular fibers in its immediate neighborhood, but whatever the cause, there was

no instance in which the eversion of the mucous membrane was sufficient to prevent extravasation.

Recognizing the very deleterious influence of this material upon the peritoneal membrane, this fact of the great certainty of extravasation adds another point to the argument in favor of abdominal section in these cases, as furnishing the only means by which this source of trouble can be absolutely eliminated.

As part of the extravasated material from the wounds of the intestine, it was an exceedingly common thing to find intestinal worms of all kinds, and in large numbers protruding from the rents or free in the serous cavity.

In the treatment adopted during these experimentations, it was found necessary to make an extensive external incision, freely exposing the abdominal cavity, in order that all the viscera might be thoroughly and carefully examined, and every wound brought within reach. In a majority of instances the median line gave space enough, in two the bleeding vessels could not be reached without a lateral prolongation toward the flanks.

There was no reason to suppose that the extent of the incision added very much, if at all, to the gravity of the operation. After opening the abdomen, the intestines were all turned out, critically examined for perforation or contusion, the situation of these fixed, and the hæmorrhage therefrom controlled by means of the snap forceps, after which wounds of special organs were sought for. If the substance of the spleen or the kidney was found perforated, the organ was immediately removed after ligating its blood-vessels, the stump being returned to the abdomen. If slight lacerations only at some point on the surface had been produced, these were closed by bringing peritoneal surfaces of the organ over the wound by means of the continued suture.

The peritoneal sac was then carefully and thoroughly cleared of blood and other extraneous substances by repeated sponging or irrigation. The intestines, which during this process had been protected by being enveloped in towels wrung out of warm water, were now cleanly sponged, while all unwounded portions were returned to the abdomen.

It seems to be of little consequence whether or not the intestines be returned to the cavity in any definite order — in fact, it is doubtful whether they are ever returned precisely to the same positions they originally occupied before being disarranged during the operation. Still, some care must be used in order to avoid the accident which happened in one experiment. After the divided ends of the intestine had been united, it was found that during the manipulation one of the ends had in some way been passed through an opening in the divided mesentery, so as to produce a figure of eight convolution in the tube. It was left in this shape. The animal recovered, and I have the specimen with me to demonstrate the perfectness and security of the union in the intestine at the place of reunion. The animal was sacrificed to secure the specimen six weeks after the operation. The abdominal cavity was quite free from evidences of inflammation, except where the misplaced folds lay in contact with each other. At this point slight peritoneal adhesion had formed between them.

Where several wounds occurred rather close together, severe enough to destroy a considerable portion of the integrity of the bowel, one resection was made to include all of them, even when the length of intestine removed measured ten inches or more. Where the points of injury were widely separated from each other and extensive damage done at each point, several resections of a length of the tube just sufficient to include the injured portions were made.

In the former case, in which several inches of the tube were

taken away, the mesentery was ligated as close as practicable to the intestine (Fig. 7), in sections corresponding to the number of blood-vessels going through it to the resected portions. The mesentery was then divided close to the intestinal wall, and a "V" shaped portion of it removed. After this, the tube itself was divided, and the wounded portion removed. One artery, always needing ligation, was found in the divided ends at the point of junction of the mesentery with the intestine. Before the final division of the intestine, its contents were pushed back out of the way, compression exercised upon its walls by a pair of forceps or a temporary ligature, in order to prevent extravasation of its contents through the divided ends. The mark of constriction made by the forceps or ligature, used to close the lumen of the bowel, was to be plainly seen several days after the operation. The safest compression can be made by an assistant's fingers. Results soon demonstrated the paramount necessity of carefully selecting the place for final division of the intestine, in order to avoid sloughing of the edges approximated together, the results being best in those cases where the division was made close to the point at which any given mesenteric artery approached nearest to the intestine, as compared with those where the cut was made in the intervals between any two branches of these vessels, and this was seemingly dependent on the better supply of blood belonging to the former cases. Immediately after division of the intestine, there followed an instantaneous, regular and considerable contraction of the caliber of the tube (Fig. 4, a), close up to the divided edge, caused by the action of the circular muscular fiber. The diameter was often diminished more than half by this contraction. This persisted for a time, but was soon followed by an eversion of the mucous membrane, which rolled out and over the constricted portion in a remarkable manner. (See Fig. 4, a, b and c.)

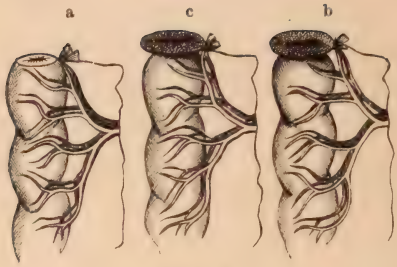

Figure 4.

This protrusion of the mucous membrane forms a serious obstacle to easy and close approximation of the ends of the bowel in the efforts to bring them together by sutures; and, when turned into the bowel during such procedure, diminishes its caliber considerably, although it was not demonstrated that the obstruction was ever sufficient to prevent the passage of the intestinal contents. Several efforts were made to get rid of it, and overcome the seeming delay caused by its presence, but all these were finally abandoned.

It was pared away with the scissors; it was dissected up from the other coats for a quarter inch from the edges, but the conclusion was finally reached that instead of being a harm, its presence was useful in giving support, protection, and perhaps vascularity to the freshly sutured edges; at least, in all instances where it was removed, the stitches were found torn out and union defeated; in no instance where it was left entire did there fail to be union in some part, and no sutures gave way when properly applied.

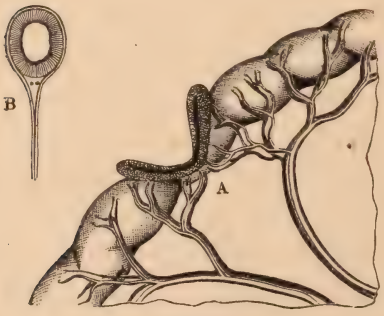

Figure 5.

In all instances where a perforation was severe enough to require a resection of the wounded part, it was found advantageous to leave, if possible, a strip of the bowel near the mesenteric junction (Fig. 5, A), taking out the wounded portion by means of a "V"-shaped incision. The part left acted as a support to the wound,

avoided division of the blood-vessels at this point, opposed the action of the longitudinal fibers, and in no instance in which this plan was adopted was there any appearance of separation of the wound or any displacement of stitches. In perforations through the stomach, the wound did well after drawing the peritoneal surfaces some distance from the edges thereof, over it by means of the continued suture, thus converting it into a linear wound (Fig. 6 A). The same plan was adopted with success in abrasion and small perforations in the small intestines. (Fig. 6 B.)

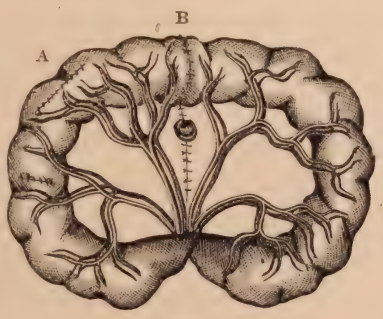

Figure 6.

This way of treating the bullet openings in the bowel is susceptible of much wider application than would appear possible at the first glance. I am quite well satisfied that it will safely take the place of excision in not a few cases of quite severe injury. The torn edges of the wound can be turned in, and peritoneal surfaces fastened together, even in large wounds, with perfect confidence in the result of safe and secure adhesion following.

It seems probable that by far the greater number of successful cases will follow a single resection, even if that include a number of perforations, and involves eight or ten inches of bowel, in comparison with those cases where several excisions are made of wounded portions widely separated.

Perforations passing through the mesenteric surface of the intestine were found the most difficult to treat, and even if slight seemed always to require a complete excision. A partial excision of this surface of the bowel resulted in an acute-angled elbow which never did well.

The point of attachment of the mesentery with the bowel will usually be found the most troublesome to manage, in applying the sutures in restoring a complete division. (Fig. 5, B.) It is quite difficult to so place the sutures as to secure a perfect reinversion of the mucous membrane, to bring serous surfaces fairly in contact with each other, and to get a sound junction. The difficulty arises apparently from the manner in which the folds of peritonæum separate from each other before passing on to invest the bowel, leaving a little triangular interval filled with loose connective tissues, fat and blood-vessels. Now, if the suture fails to include the muscular coats of the intestine as well as the peritonæum at this point, the junction will surely give way and extravasation result. To make this point secure, the greatest care must be taken in placing at least three sutures (Fig. 5, B), this number being usually quite enough to include the troublesome area, and these should always be the first sutures applied. In placing the remaining sutures to complete the junction after placing the three sutures mentioned, at the mesenteric surface, it assists materially in the ease of application, saves time, and especially avoids trouble from the everted mucous membrane, to apply one at the most convex surface, and then one half way down, on each lateral surface. After this is done, the remainder can be introduced easily and rapidly. If introduced in a regular series, one after the other, all the way around, it is a very slow process; the mucous membrane is always in the way, the needle openings in the intestines are apt to be uneven, and it is altogether the poorest plan of proceeding. The advantages mentioned as gained by taking the course suggested, are certainly all of them items of importance, and have some bearing on the result. At best, these procedures will be found very prolonged and tedious. The material used by me for sutures was silk

and catgut—the latter for the continued, the former for the interrupted ligatures. No. 1 catgut; No. 2 silk. The needles were the full curved round needle, or ordinary straight sewing needle; the latter is the best. The sutures were introduced about the third of an inch, never less, from the divided edges, made to include the peritoneal and muscular coats, and brought out just free of the edge on one side, and were then reintroduced close to the edge, and made to include about the same amount and kind of tissue on the other side, being *very sure not* to allow the nedle to pass into the intestinal cavity. (Fig. 11.) Mr. Howse,* of London, proved conclusively in his cases of gastrotomy, that the fact of entrance of the needle into the cavity of the tube, carrying the thread with it, made the difference between success and failure, cases dying from peritonitis and extravasation when the entry occurred, and recovery following when the thread included only the peritonæum and muscular coats.

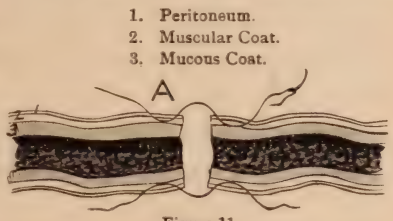

Figure 11.

Again, the everted tissue should be turned in before introducing the needle, so that it will pass through the rim of constriction. If entered too far away from the divided edge, too much tissue is turned into the intestine. When the mucous membrane was turned in, and the suture tightened, two broad surfaces of peritonæum were brought in contact. This you will recognize as Lembert's suture (Fig. 6, B), with one change. Lembert directs that only one and one-half line in width of tissue should be taken up by the suture. This amount of tis-

* Mr. Howse was the first surgeon to use the double row of sutures for the junction of serous surfaces together. Czerney's suture is an application of it to intestinal wounds. Its use is altogether too tedious, and gives no better result than the single suture including sufficient time.

sue will do very well in the closure of small slits, for which it was intended, and to which it was applied; but complete resection needs a much firmer hold to withstand the strain of peristaltic movements. *The fact is, that it makes no difference whatever what kind of suture is used, so that the principle of positively securing the application of two broad surfaces of peritonæum in contact with each other is certainly carried out. Jobert's, Gely's, and Czerney's double row of sutures were all given a fair trial*, but none of them resulted as well as this modified Lembert stitch. It never failed to be followed by good union when properly applied, with peritoneal surfaces brought together around the entire circumference of the intestine.

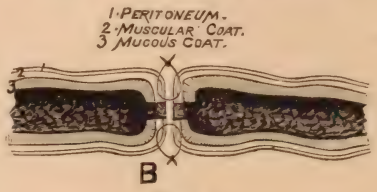

Figure 11.

The greatest number of mishaps followed drawing the sutures too tightly, which, if done, leads to death of the applied edges, and, of course, to failure. They must be drawn only sufficiently close to bring the surfaces fairly in contact, the subsequent swelling from obstructed circulation will hold the surfaces firmly together until glued to each other by the rapidly forming adhesive material.

The interval left by the incurving of the edges of the bowel, immediately after the completion of the operation, was found entirely obliterated, and the sutures covered up by effused lymph at the end of twenty-four hours. In one or two instances, where very small openings had been made in the bowel, they were occluded by passing a suture around the perforation, a short distance from its margin, pushing the wound into the cavity of the intestine, and then by tightening the suture the peritonæum was drawn together over it; a very satisfactory

plan of procedure where circumstances will permit its application.

Figure 7.

The question of the proper disposition to be made of the divided mesentery, after removal of some length of intestine, is an important one to decide. No plan adopted proved entirely satisfactory. Previous to separation it was ligated in sections (see Fig. 7); the part beyond the ligature is apt to mortify and thus prove a focus for fatal inflammation. The tissue of the mesenteric membrane is not very vascular, and the vitality of the distal portion of the stump is seemingly best provided for by causing it to adhere to surrounding vascular parts.

In some cases the stumps were left free in the abdominal cavity; these all did badly, each showing mortification. In others the different sections were all included in one suture and then stitched to the bowel at the seat of operation, making as nearly as possible a continuous surface of mesentery.

These did much better, there being few instances of sloughing. When sloughing occurred, it seemed to be dependent upon and follow a too tightly fastened ligature. This method above mentioned of treating the divided mesentery is useful in another way: it gives support to the bowel at the point of resection, maintains the intestine in proper position by preventing bending, and also leaves fewer raw surfaces free in the serous sac. This last, a condition acknowledged to be the frequent source of serious trouble from faulty adhesions to surrounding organs, and from furnishing points from which septic absorption takes place.

A plan of dividing and treating the intestine and mesentery

has been suggested* to me as a possible improvement on those already noticed. It is really an application of the plan already recommended in single perforations. (Fig. 5, A). This is to make the separation through the intestinal walls three-eighths of an inch on either side of the mesenteric attachment (Fig. 8), tear away the mucous lining of the retained strip of bowel (Fig. 9), and draw the peritoneal surfaces thereof together by the continued stitch. (Fig. 8). This would avoid division of the blood-vessels going to the bowel, do away with the necessity of using ligatures, and leave no raw surfaces free in the abdominal cavity. The opening formed by the folding together where the bowel-ends are united, should be closed by the continued suture. (Fig. 10). This method was adopted in one experiment with an excellent result.

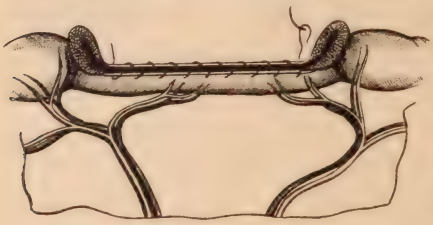

Figure 8.

Figure 9.

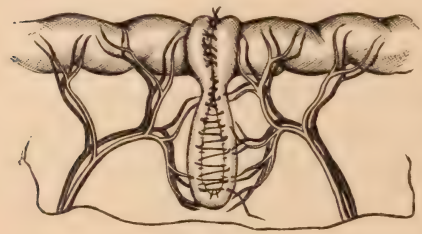

Figure 10.

Bleeding from slight lacerations of the spleen, kidney, or liver can be controlled by actual cautery lightly applied, perhaps the very best method to adopt. If the wound is a complete perforation of the body of the organ, the hæmorrhage is very great, rendering extirpation of the entire organ apparently the only sure way of surmounting the difficulty.

* Dr. John Bartlett, Chicago.

Quite frequently the entire mass of the greater omentum seemed to require removal. The bullet in the transit not only perforated it here and there, but passed along between its folds as well, leaving injured tissue and blood-clots of considerable size in its track. These clots disseminated themselves in the meshes in such a way as to entirely prevent their removal without tearing the tissue to shreds. When this condition was present in any degree the mass was amputated, after ligation, in sections. In a few instances these stumps gave rise to trouble, either from recurring hæmorrhage or mortification of the distal end.

In the aftertreatment it was often necessary to administer morphia to secure quiet. Very careful attention must be paid to the amount and kind of food given for some time after apparent recovery. One experiment resulted in failure after the lapse of three weeks from date of operation. The animal was lively, running about as freely as ever, all the functions normal, and the external wounds all healed, when it suddenly sickened and died, having tetanus accompanying rupture of the intestine, several inches above the seat of resection. Post-mortem examination showed masses of food and grit and greasy cloth, occluding the intestine, and distending it so enormously that rupture was produced; the tube at the seat of the operation was patulous and nearly of usual size. This animal was lost solely through neglect in the matter of feeding. Milk alone was given in all other cases for some weeks after operation. Certainly this is a matter of great importance, and suggestive of the proper care to be given after all such operations. Extreme emaciation occurs during the first week following the operation, and, if there is shown any likelihood of recovery, there follows a voracious appetite, which should be very sparingly gratified.

The circumstances under which these experiments were done, were such that it was absolutely impossible to carry out full antiseptic appliances. The external incision was treated with iodoform and oakum or absorbent cotton, and with two exceptions healed by first intention.

The bullet wounds through the abdominal walls were not probed nor disturbed in any way. Occasionally, when large and much contused, iodoform was poured on them. In only two instances did they suppurate or give rise to any trouble whatever, crusting over and healing rapidly. This result clearly enforces the rule of not disturbing the track of a bullet through the soft parts unless the most urgent reasons call for interference. The damage of a serious nature is not in the abdominal walls, but in the cavity; the nature of it can be better ascertained and the most satisfactory treatment adopted, after section through the linea alba, rather than by enlargement of the wound of exit or entrance, if any surgical interference be instituted.

In gun-shot wounds of any part of the body, it is not the injured muscular tissue or facia that causes grave concern, but the torn arterial trunk, or severed nerve, or fractured bone made by the missile, and here, too, incisions out of the course of the bullet track often furnish the best exposure of the parts for manipulation.

None of the wounds of entrance were perpendicular to the surface of the abdomen. All were more or less obliquely directed through the component tissues of the walls, so that they were valve-like in character and tended to close spontaneously. None of these cases presented any extravasation of the contents of the intestines through the external wounds, notwithstanding the lacerations of the tube were often very extensive, and considerable quantities of fæcal matter were found in the

peritoneal sac. The conclusion naturally follows, that the discharge of such matters, through the external openings, is not of frequent occurrence after the wounds under consideration. The absence thereof is far from being proof of the non-occurrence of perforation of the intestine.

It can scarcely be expected that extravasation through the wounds in the abdomen will often happen as an immediate occurrence. This is most likely to occur, if present at all, several days after the injury, following adhesion of the bowel to surrounding parts, and the accumulation of considerable quantity of matter.

There is no reason to suppose that interference with the adhesions to be met with in operations, done some time after the injury, would be followed by any worse consequences than that which follows their disruption during the performance of operations for ovarian or other tumors. The hazard supposed to attend their severance is certainly exaggerated. With a clean cavity they will do equally well in all cases.

These experiments have not developed any data which will aid in the positive diagnosis of the severity, or extent, or kind of injury done to the viscera, or render such diagnosis less difficult than heretofore, previous to abdominal section.

They go a step in advance of this by supporting the assertion that it is absolutely useless to expect immunity from perforations of the intestines when the bullet has traversed the cavity. It seems, and is infinitely more reasonable to subject a patient to the slight risk of an abdominal section, showing unwounded intestines, than to allow him to pass through the fearfully deadly peril of wounded intestines unrelieved, on the barren supposition that they may have escaped injury.

Some uncertainty as to its necessity is likely to arise, except in those cases showing extravasation of the contents of the bowels, or those where the free loss of blood, as indicated by the usual symptoms accompanying such accident, calls for aid. When doubt exists, and a critical condition of the patient argues severity of lesion, abdominal section surely seems to promise relief that can come in no other way. Exploratory incision of the abdominal walls has been done so often, and with so little hazard, as to entitle it to be classed as a procedure in itself almost destitute of danger. Such a conclusion is certainly supported by the results developed during these trials. The rule was, no trouble whatsoever from this incision.

No deduction can more justly or positively follow, as the result of these experiments, than that an incision *de novo*, through the linea alba, is the best method of procedure in the treatment of the class of wounds under consideration; a plan far preferable to enlarging either of the openings made by the bullet. It at once gives command over the entire cavity; therefore any lesion likely to result in harm is far less liable to be overlooked; it is the least vascular part of the walls; incisions thereof are more easily and perfectly co-aptated than elsewhere, heal readily and soundly, and as a consequence, the oncoming cicatrix is less likely to be followed by ventral herniæ.

Thirty-nine (39) animals were used in these experiments, exclusive of those dying from the effects of the anæsthetic. Two of the thirty-nine were used to demonstrate the effects of closure of the main branches of the mesenteric artery upon the nutrition of the intestines. Of the remaining thirty-seven (37), three cases died immediately after the shot

or from the effects of profuse hæmorrhage; one having a division of the aorta just below the mesenteric artery; the second had a large laceration of the kidney, with a wound of the renal artery; the third, a laceration of both kidney and spleen. One case, No. 4, had tetanus three weeks after operation, and is given a special position, simply owing to the presence of this condition as a complication in the case. The post-mortem examination, as already mentioned, developed other conditions which would have caused death, and which were no doubt the cause of the tetanic convulsions. Twelve of the remaining cases died inside of twenty-four hours, either from severe primary or recurring hæmorrhage, and the effects of the very extensive character of the wounds. Two out of this twelve (12) were cases requiring removal of the pregnant uterus, accompanied with many perforations of the bowel; death in both occurred from secondary hæmorrhage from uterine stumps — the ligature having slipped. Three (3) more had slight lacerations of the spleen and numerous perforations of the intestine. The spleen was removed and several inches of the tube excised in each case. In three (3) others, from twelve to twenty inches of the bowel was excised, and many arterial trunks severed. One of the twelve (12) had rapid mortification of five or six inches of the entire caliber of the bowel, apparently dependent upon the division of two large mesenteric arteries by the bullet, and also the resection of six inches of the intestine. The remaining three (3) of the number dying inside of twenty-four hours, are classified as having died of shock. On all of them the damage done by the missile was of excessive severity. The bullet was of large size (38 or 44 caliber), and the fire-arms possessing great penetrating

and lacerating power. There was not manifested in any case any recognizable evidence of shock aside from that following great loss of blood. The transit of the bullet made no noticeable impression upon the pulse or respiration. In every instance where signs of severe prostration became manifest through change in respiration or weakening of pulse, there was found profuse hæmorrhage to account for such condition. I am inclined to infer that the cases are exceptional indeed, in which purely nervous shock will give rise to symptoms severe enough to mislead one to perform an unnecessary ventral section; rather, when severe constitutional manifestations follow the passage of a bullet through the abdominal cavity, good cause for them will be found, as soon as the cavity is opened, in wounded viscera or blood-vessels, and this course will often be the only possible way of either actually saving life or even prolonging it. None of these twelve cases could possibly have lived longer than twenty-four hours after the injury received. Most of them would have died much sooner without the control of hæmorrhage, alone made possible by the opening.

Two cases of the series were subjected to the expectant treatment. These cases were chosen because their injuries did not seem very severe; the hæmorrhage was not great, and the prostration not extreme. Both died; the first in one day; the other lived five days. Post-mortem examination showed extensive extravasation of the contents of the bowel and septic peritonitis.

In one case an attempt was made to establish an artificial anus. The wounded intestine was resected, and the ends fastened to the edges of the abdominal incision. The animal died of septic peritonitis in three days. This trial was made

early in the experimentation, before any definite plan of procedure had been settled upon. This is the only experiment that has given rise to any regret, for I feel satisfied that, with a fair junction of the bowel and a clean abdomen, the animal would have been saved.

Eighteen of the thirty-seven (37) have thus far been accounted for; of the remaining nineteen (19), ten (10) died and nine (9) recovered.

The ten fatal cases lived from three days to three weeks. Peritonitis from one cause or another seemed to be the precursor of death. In six of them, mortification of the ligated stumps of the divided mesentery, together with mortification of the edges of the recently united bowel, were present. In the one that lived three weeks, death was the result of intestinal obstruction, caused by the adhesion of a fold of the intestine to the stump of mesentery left free in the cavity. An acute flexure was produced at the point, against which the contents of the bowel had accumulated in large quantity. A rupture was found above this mass, through which extravasation had taken place. The inflammation was so intense that everything was matted together, and the specimen so horribly offensive it could not be preserved. There was no separation at the point of operation on the bowel; it was thicker here than elsewhere; but full distension with water was allowed without leaking. All of these cases demonstrate conclusively the necessity of great care in the manner of dealing with the divided mesentery, and in the application of the sutures which bring the separated bowel-ends together. The remaining four furnished evidence of separation of the recently united parts of the intestine at the mesenteric junction. In all of them the thread failed to

include the muscular and fibrous coat of the bowel, holding only the peritonæum. The result was extravasation, and death followed.

It may be a matter of surprise to you that the percentage of successful cases presented is so small—nine out of nineteen of those surviving over 24 hours—so few out of so many. To me, knowing well the extremely adverse circumstances under which these experiments were performed, it is a matter of astonishment to have so many recoveries included in so few cases. It is suggestive to remember that all the recoveries followed the use of the modified Lembert method of bringing the peritoneal surfaces together, while in many of the failures, trials were made of other methods. Full six weeks have gone since the last case followed by recovery was subjected to operation. The first favorable case was treated four months ago. None of the animals present evidence of being other than in their usual health. The longest resection of intestine among the recoveries measured over six (6) inches and included four (4) perforations.

It is scarcely possible to do work of any kind under more disadvantageous surroundings than accompanied the performance of these experiments. The operative work was carried on, and the animals kept in the prosector's room of a medical college during the winter season, in the midst of the odds and ends and bad hygienic conditions of such a place. No better accommodations could be secured. The labor has been purely one of experimental inquiry, and not a striving after recoveries, implying a choice selection of attending circumstances and special preparations to that end; therefore, I judge it proper and fair to claim the results as satisfactory. These results certainly indicate that a better

showing is likely to follow where more satisfactory control can be had over both patients and surroundings than was present during these examinations.

They clearly demonstrate that a hopeful expectation of recovery may be entertained after operation, and suggest the nature of the injuries produced, what accident to avoid, and what treatment to adopt.

My confidence in coming before you with no better record is assured, when I remember that all of you are well aware of the great mortality of these injuries, under all circumstances. It must be large, surely, when Dr. Otis, in the surgical history of the war, says the authenticated cases of recovery can be counted on the fingers of one hand. It cannot be said that operative interference in these cases has as yet an established position. Still, perhaps Dr. J. Marion Sims looked with prophetic eyes upon the future, when he closed the article already referred to with the following words: "I have the deepest conviction that there is no more danger of a man's dying of a gunshot or other wound of the peritoneal cavity, properly treated, than there is of a woman's dying of an ovariotomy properly performed. Ovarian tumors were invariably fatal till McDowel demonstrated the manner of cure, which has now reached such perfection that we cure from 90 to 97 per cent. of all cases. And by the application of the same rules that guide us in ovariotomy to the treatment of shot wounds penetrating the abdominal cavity, there is every certainty of attaining the same success in these that we now boast of in ovariotomy."—*British Medical Journal*, March 4, 1882.

In a rather quaintly-written but richly-laden book on surgery, by Herr. L. Heister, Professor, etc., written in 1739, there occurs this passage:

"When the intestines are wounded but not let out of the

abdomen, and therefore the wounds are out of reach, the surgeon can do nothing but keep a tent in the external wound, according to the rules laid down at chap. V, and after this bleed the patient if his strength will admit of it, advising him to rest, eat abstemiously, and to lie upon his belly; the rest is to be left to Divine Providence and the strength of his constitution. But the question may be asked here whether a surgeon may not very prudently, in this case, enlarge the wound of the abdomen, that he may be able to discover the injured intestine and treat it in a proper manner. Truly I can see no objection to this practice, especially if we consider that upon the neglect of it certain death will follow, and that we are encouraged to make trial of it by the successes of others. Sacherus, in Programmate Publico, Lipsiæ, ed. 1720, mentions a surgeon who performed this operation successfully."

A period of 100 years and more has rolled away since Dr. Heister published his belief and reported recovery, to the time when Dr. Sims expresses his convictions—over a century of doubts, timidity, uncertainty, and gloomy misgivings, lightened only occasionally by some bold and resolute assertions. The future asks for action, and it is not unreasonable to assert that careful trials will accomplish successful results.

Avoiding any spirit of dictation, it seems proper to tabulate the following conclusions as an outgrowth of the experiments:

First. Hæmorrhage following shot wounds of the abdomen and the intestines, is very often so severe that it cannot be safely controlled without abdominal section; it is *always* sufficient in amount to endanger life by secondary septic decomposition, which cannot be avoided in any other way than by the same treatment.

Second. Extravasations of the contents of the bowel after shot injuries thereof are as certain as the existence of the wound.

Third. No reliable inference as to the course of a bullet can be made from the position of the wounds of entrance and exit.

Fourth. The wounds of entrance and exit of the bullet *should not be disturbed* in any manner, except to control bleeding or remove foreign bodies when present. They need only to be covered by the general antiseptic dressing applied to the abdomen.

Fifth. Several perforations of the intestines close together require a single resection, including all the openings. Wounds destroying the mesenteric surface of the bowel always require resection.

Sixth. The best means of uniting the wounded intestine after resection is by the use of fine silk thread after Lembert's method. It must include at least one-third of an inch of bowel tissue, passing through only the peritoneal and muscular coats, never including the mucous coat. The everted mucous membrane must be carefully inverted, and needs no other treatment.

Seventh. Wounds of the stomach, small perforations, and abrasions of the intestine, can be safely trusted to the continued catgut suture.

Eighth. Every bleeding point must be ligated or cauterized, and especial care devoted to securing an absolutely clean cavity.

Ninth. The best method of treating the stumps of divided mesentery is to save the mesenteric surface of the bowel as above indicated.

Tenth. *Primary abdominal section* in the mid-line gives the best command over the damage done, and furnishes the most feasible opening through which the proper surgical treatment of such damage can be instituted. Further, its adoption adds but little, if anything, to the peril of the injury.

(*To be continued.*)

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

The first annual meeting of THE AMERICAN CLIMATOLOGICAL ASSOCIATION was held in Washington, D. C., May 3d and 5th, inst.

In the absence of Prof. Loomis, the President, Dr. F. I. Knight, of Boston, First Vice-President, occupied the chair.

The first day was occupied in adopting a suitable Constitution and By-Laws.

The second day was devoted to the reading of Papers, as follows: Address by the presiding officer, Dr. Knight. "The Aetiology of Pulmonary Phthisis," by Dr .E. F. Eastbrook, of Brooklyn; "The Effects of Sea Air upon Diseases of the Respiratory Organs," by Dr. Boardman Rood, of Atlantic City; "The Relation of Laryngeal Diseases to Pulmonary Diseases," by Dr. F. H. Bosworth, of New York; "Dryness," by Dr. Chas. Dennison, of Denver, Col., in which he dwelt on the following points:—"Variability *versus* Equability.—A rule for classifying climates as to dryness and desirability, based upon low, absolute, and relative humidity and preponderance of sunshine.—The influence of elevation, sunshine, cold, etc., in producing desirable dryness.—The physical effect of dryness on man;" "City Life and City Air Injurious to Consumptives," by Dr. Donaldson, of Baltimore; "The Use of Compressed and Rarefied Air as a Substitute for Change of Climate in the Treatment of Pulmonary Diseases," by Dr. J. Solis Cohen, of Philadelphia.

The following officers were elected for the ensuing year:

President—PROF. A. L. LOOMIS, New York.

First Vice-President—DR. F. I. KNIGHT, Boston.

Second Vice-President—DR. W. H. GEDDINGS, Aiken, S. C.

Secretary and Treasurer—DR. J. B. WALKER, Philadelphia.

Council—DR. J. H. TYNDALE, New York; DR. E. T. BRUEN, Philadelphia; DR. E. D. HUDSON, New York; DR. FRANK DONALDSON, Baltimore; DR. BEVERLY ROBINSON, New York.

BOOKS AND PAMPHLETS.

BOOKS AND PAMPHLETS RECEIVED.

Manual of Practical Hygiene; Parkes; vol. ii. Wm. Wood & Co.

Medical Ethics; Hamilton, Birminghams & Co.

Eczema and Its Management; Bulkley. Putnam's.

Da Costa's Medical Diagnosis; sixth edition.

A Yearbook of Surgery; Charles H. Knight. Putnam's Sons.

Medical Education. W. T. Keener.

Shakespeare as a Physician; Chesney. Chambers & Co.

Ophthalmology for the General Practitioner; Adolf Alt. J. H. Chambers & Co.

Sexual neurasthenia; George M. Beard. E. B. Treat, New York.

Die Diphtheria. Ihre entstehung, verhutung, und Behandlung; Dr. Med. C. G. Rothe, Leipzig. A. Abel.

Harper's Physicians' Vade Mecum; Wm. Wood & Co., 1884. W. T. Keener.

A Text-Book of Pathological Anatomy and Pathogenesis; sec. i to viii; Ernst Ziegler. McMillan & Co. W. T. Keener.

Hand-book of Vertebrate Dissection; part iii. McMillan & Co., 1884. W. T. Keener.

Pathology, Diagnosis, and Treatment of Diseases of the Rectum and Anus; Chas. B. Kelsey.

Wood's Library of Standard Medical Authors. 1884. W. T. Keener.

Practical Manual of Obstetrics; Dr. E. Verrier.

Wood's Library of Standard Medical Authors. 1884. W. T. Keener.

One Hundredth Anniversary of the Foundation of the Medical School of Harvard University.

Congenital sipoma, Jacobi.

Proceedings of the Naval Medical Society.

Removal of the Ovaries and Fallopian Tubes; Batty-Tait Operation. Thomas H. Hawkins. 1884.

Transactions of the American Ophthalmological Association. 1883.

Some Recent Progress in Diseases of the Nervous System; Talbot Jones, M. D.

The Treatment of Habitual Constipation; Henry N. Josselyn.

Practice at the County Infirmary; A. W. Hagenbach.

The Symptoms and Diagnosis of Malaria in Children; S. Emmett Holt.

Lister's System of Anti-Septic Wound Treatment Versus Its Modifications; B. A. Watson.

Annual Address Before the American Academy of Medicine; Henry O. Macey.

Suicide from a Medico-Legal Standpoint; J. E. McNeill.

Uterine and Ovarian Irritation a Cause of Insanity; E. S. Dalberg-Norred.

Timely Cathesis; Thomas H. Reynolds.

The Reciprocal Attitude of the Medical Profession and the Community; Alexander Hutchins.

Alcohol as a Food, a Medicine, a Poison, and a Luxury; Geo. C. Pitzer.

The Opium Psycho-Neurosis, Chronic Meconism or Papaverism; C. H. Hughes.

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ORIGINAL COMMUNICATIONS.

ARTICLE I.

THE EFFECT OF NOISES UPON CERTAIN FORMS OF DEAFNESS.

By GEORGE HAWLEY, M. D., *Chicago, late House Surgeon at Golden Square Throat and Chest Hospital, London, England, Assistant Surgeon to the Illinois Eye and Ear Infirmary.*

[*Read before the Chicago Medical Society, June*, 1884.]

More than two hundred years ago Dr. Thomas Willis, of Amsterdam, described a certain form of deafness in which hearing was improved by noise enabling persons to distinguish tones and sentences which at other times would be unheard. This symptom, bearing the name of Paracussis Willisiana, has been accepted by most aurists, but no satisfactory explanation as to its cause has been advanced.

While Politzer, von Troeltsch and others consider that it depends upon some change in the position of the ossicles or membrana tympani, many, like Krama, take different views and believe that it is due to a stimulating of the auditory nerve, thus forcing it to a more healthy action. Experience favors the theory that the middle ear is the seat of this symptom,

that some change is brought about by the constant noise which restores the hearing for the time being. What this change is, is still open to discussion. It may be of interest to relate the following case which came under my observation while house surgeon at the Golden Square Hospital, London. Mrs. H., aged 30, had for the last five years suffered with marked deafness in both ears. Common conversation was heard with difficulty except when any loud noise was present. At that time the hearing apparently was greatly improved. A watch could be heard on the left side only upon contact, and on the right at a distance of about two inches. The tuning-fork showed no trouble of the acoustic nerve, but clearly indicated some disturbance in the middle ear. The drum-head was normal as to tension, color, etc., while perfect movability existed in the malleo-incudal joint. Nothing indicated anchylosis of of any of the ossicles. The appearance of the throat was healthy and the eustachian tubes both patent. This is a good example of this form of deafness in which the symptom of hearing better in a noise manifests itself.

Roosa, however, mentions two cases where the drum-head was more or less destroyed and still, noises improved the hearing. The ossicles in both ears were intact. Politzer, in his work on aural surgery, states that this improvement is seen only in middle ear affections of an adhesive or sclerotic character, and regards it as a most unfavorable symptom for satisfactory prognosis. Roosa, on the contrary, states that it is found in many forms of ear affections, and does not necessarily forbid one from expecting favorable results from treatment. In his article on "The Effects of Noises upon Diseased and Healthy Ears," he says, "I have known two cases where this symptom occurred in patients who regained their hearing perfectly. While the symptom frequently accompanies incurable

diseases of the middle ear, I believe it is a very frequent symptom in sub-acute cases where both ears are affected. Of course it would not be observed in disease of one ear only."

Whatever may be the cause of this symptom, we are justified, I think, in believing that certain pathological changes are then present in the middle ear, which will be found at no other time. If this be true, in what does the change consist?

Willis considered the change brought about by the action of strong wave tones upon a relaxed membrana tympani to be the cause of this symptom. As long as the drum-head is in a relaxed condition it refuses to respond fully to wave impressions. It is no longer a perfect sound-conductor until its tension is restored. Noises, by forcing air against the membrane, press it inward, restore its tension, and hearing is improved until the pressure is removed, when deafness returns as bad as ever. If this improvement was found only in such cases as he describes, we might accept his theory as correct; but, unfortunately, as I have already stated, it is present with no change whatsoever in the drum-head. Therefore, in such cases, at least, this improvement in hearing is due to some other cause. We have in the middle ear two other elastic membranes, one of which takes as important a part in conveying wave impressions as the membrana tympani. Any change by disease or injury would be fully as disastrous to normal hearing; I mean the membrane of the foramen ovale.

When we consider the extraordinary fine shades of vibrations transmitted by this membrane to the fluids of the labyrinth, are we not justified in expecting that any loss of accuracy and precision on the part of the transmitting apparatus at this point will cause a corresponding loss of hearing power. According to Riemann the excursions of the stapes in the fainter tones are so small as to escape detection even with the high-

est power of the microscope. Therefore a corresponding sensitiveness on the part of the membrane must necessarily be present in order to appreciate and transmit these vibrations. Thus we see that any change at the oval window which tends to hinder the passage of vibrations to the fluids in the inner ear must cause diminution in hearing. If, then, the membrane from any cause becomes relaxed, and loses the power of responding to vibrations, it acts no longer as a sound conductor but as a damper to any wave impressions.

This is demonstrated in the case of relaxed drum-heads where inflation improves the hearing. Not only must this elastic plate (so called by Politzer) be capable of responding fully to any wave impulse, but it must also bear a certain relation to the foot of the stapes. I mean by this that a due amount of pressure must be applied by the stirrup and a sufficient resistance be offered in every ear that possesses perfect hearing. If this is lost, deafness is the result. Chronic suppurative inflammation of the middle ear, with destruction of drum-head, incus and malleus, is a proof of the correctness of this statement. Hearing is here frequently improved by a false drum-head, which presses the loose stapes against the membrane of the foramen ovale, thereby restoring the relative positions of the parts. In a relaxed membrane the pressure of the stapes is wanting, due to an absence of resistance in the diseased membrane itself.

Until we find some means of restoring this needed resistance, deafness remains. Thus through the loss of elasticity in this membrane we lose two important factors for perfect hearing. First, this membrane, like the membrana tympani, while relaxed, refuses to act as a conductor of sound by not responding to vibrations given it. And second, the proper relation between it and the stapes is destroyed, the necessary

pressure and resistance being absent. We find in the case of an atrophied drum-head that hearing is frequently improved by inflating the middle ear, which restores the tension to this membrane by forcing it outwards. One might suppose that such inflation would likewise restore lost hearing if due to a relaxed membrane at the ovale window. Unfortunately, the same act which might restore to this membrane its proper tension, forces it inwards as well, and thus separates the stapes from it.

Though the membrane may be in a proper condition for receiving and transmitting wave sounds, the stapes, from the absence of any pressure applied by it to this membrane, will be unable to perform its duty—there will be more or less obstruction to the passage of sound at this point.

Whatever, then, restores the hearing in these cases. must not only renew the tension of the membrane, but maintain as well the relative position of health between it and the stapes.

This, in my opinion, can only be accomplished by some influence brought to bear upon the membrane and stapes from outside the middle ear.

If now we consider the effect of wave impulses upon the membranes and ossicles, we can, I think, understand how a loud and continuous noise might improve the hearing where deafness is due to such pathological changes as herein described.

The air, set in motion by this noise, strikes upon and pushes the drum-head and ossicles inwards; this crowds the air in the middle ear against the ovale window, and the membrane, if relaxed, is made tense by this pressure. At the same time, the relative position between it and the stapes, as to pressure, etc., is also restored, and hearing for the time is therefore improved.

This noise, which would confuse one with normal hearing, is absorbed, so to speak, in removing the cause of deafness.

In case of perforated drum-head the vibrating air acts directly upon the diseased membrane and stapes.

Von Troeltsch mentions a case where a magistrate so afflicted improved his hearing by pressing a bit of stick against the drum-head. Allen, also, in his work on Aural Surgery, states, while speaking of this symptom, that the hearing power was increased in a patient who presented herself with marked destruction of the drum-head by pressing cotton against the ossicles. Another is also noted where a large perforation existed. Here, before and after healing of the perforation, hearing was improved by pressure.

Though these three cases do not in themselves place this theory beyond dispute, it may still make it worthy of consideration.

It may encourage us to further investigations, which, perchance, may result in establishing beyond a doubt the cause of improved hearing in certain forms of deafness, by noise.

ARTICLE II.

CELLOIDIN AS AN EMBEDDING MASS. *By* DR. BOERNE BETTMAN, *Chicago.*

[*Read before the State Microscopical Society, June* 13, 1884.]

Not very long ago I exhibited to the members of this society an improved microtome and samples of embedding masses. Since then I have had occasion to employ a preparation but lately made known to the scientific world, which surpasses in every respect those heretofore in vogue. This preparation is known as Celloidin mass.

Celloidin is the purest gun cotton or pyroxylin. It is manufactured by Mr. G. Schering, of Berlin. He has succeeded in making, by a patented method, an article free from all precipitating organic substances, which, in distinction from all other gun cotton, he calls by this name. Its use in the form of gelatinous plates is, according to the manufacturer's statements, free from danger, it being inexplosive. The mass in question was first employed by Prof. Otto Becker, of Heidelberg, who pays a high tribute to its excellent qualities in his classical work, "The Pathology of the Lens."

It is prepared in the following manner: Take of alcohol and sulphuric ether equal parts, mix and add sufficient celloidin to form a jelly-like substance. The preparation must be kept in an air-tight vessel. The specimen to be embedded should have undergone the usual hardening process, in Müller's fluid and alcohol; it is then stained in bulk by carmine, hæmatoxylin, or any other tincture. After having taken up sufficient coloring matter, which is usually accomplished in 24 hours, the specimen should be thorougly cleansed by immersing it in running water. Then it is placed in absolute alcohol 24 hours longer. It is now ready for the celloidin bath, where it is permitted to remain at

least 24 hours, in order that the mass may permeate the tissues thoroughly. If the cover of the jar containing the embedding mass is a close fitting one, preventing the evaporation of the ether and alcohol, the specimen may remain for an indefinite period.

The final step is the pasting of the preparation on a cork. A few moments' exposure to the air will suffice to fasten the specimen sufficiently firmly to allow of its immersion in methylated spirit, sp. gr. 82. It should be exposed to the hardening action of alcohol from 15 to 24 hours before being cut.

In the majority of cases it is desirable to mount the section encased in the celloidin. This necessitates a slight deviation from the course ordinarily pursued. Oleum origanum, or bergamot oil must be substituted for clove oil. Bergamot oil is preferable to the former. If origanum oil be employed, the preparation should be transported rapidly ; an exposure longer than one minute to this oil will produce visible changes in the celloidin, it becomes cloudy, and impairs the value of the cut. In other respects the method of treating the sections is the usual one.

A few moments' exposure to clove oil dissolves the mass.

The advantages of this preparation over others are manifold. The material employed is clean, experience forms no factor in its preparation, which is facile and rapid. It permeates the tissues thoroughly, and fixes the various parts in position, thus preserving their relationship. It is perfectly transparent, amorphous, and, since the preparation to be embedded can be stained beforehand, it remains invisible to the eye, and does not detract from the usefulness and appearance of the section.

113 Adams Street.

ARTICLE III.

CLINICAL AND PATHOLOGICAL REPORTS OF CASES OF INSANITY. *By* S. V. CLEVENGER, M.D., *Special Pathologist Cook County Insane Asylum.*

	Males.	Females.	Total.
Present June 1, 1883	227	273	500
Admitted during year	224	223	447
Total under observation	451	496	947
Of whom died	56	66	122
Of whom were discharged	86	95	181
Present June 1, 1884	309	335	644

From October to February the death rate was less than during the other parts of the year.

The Psychoses of those admitted during the year ending June 1, 1884, were as follows:

	Males.	Females.	Total.
Alcoholic Insanity	34	9	43
Circular "	2		2
Epileptic "	15	12	27
Hebephrenia	7	4	11
Hysterical Insanity		8	8
Hypomania		1	1
Imbecility	3	3	6
Katatonia	5	2	7
Mania	54	49	103
Melancholia	42	59	101
Paranoia	7	9	16
Paretic Dementia	11	2	13
Primary Confusional Insanity	4	6	10
Recurrent Alcoholic	1		1
" Mania	6	8	14

	Males.	Females.	Total.
Recurrent Melancholia	2	5	7
Rheumatic Insanity	1	1	2
Secondary Confusional Insanity	2	4	6
Senile Dementia	7	18	25
Stuporous Insanity	5	1	6
Syphilitic "	2	1	3
Traumatic "	4		4
Transitory Frenzy		1	1
Terminal Dementia	10	15	25
Typhomania		2	2
Undiagnosed. No Psychosis apparent		3	3
	224	223	447

One of the Paretics admitted was a negro.

The greater number of those discharged were upon admission maniacal, melancholiac or alcoholic, 28 of the first had been detained from 3 months to 3 years; 16 of them were discharged within 3 months of their admission.

Of the melancholiac, males, 19; females, 27; one-half remained less than 6 months, the others various periods, up to 2 years.

The alcoholics recovered most rapidly, often within two weeks. They also die soonest of any of the forms of insanity.

The discharges from among those admitted during the year were as follows:

	Under 3 mos.		Under 6 mos.		Under 1 year.	
	M.	F.	M.	F.	M.	F.
Alcoholic Insanity	9	4		1		
Epileptic "	3	1	2	1		
Hebephrenia			2		1	
Hysterical Insanity		3		1		1
Imbecility		2				

	Under 3 mos.		Under 6 mos.		Under 1 year.	
	M.	F.	M.	F.	M.	F.
Mania	10	9	1	2	1	
Melancholia	3	10	10	3	1	1
Paranoia	1	2	1	3		
Paretic Dementia			1			
PrimaryConfusional Insanity	2	2				
Recurrent Mania		2	2	1		
" Melancholia		1		2		1
" Alcoholic					1	
Rheumatic Insanity		1				
Senile Dementia		3				
Stuporous Insanity		1			1	
Terminal Dementia	1	1		1		
Totals	29	42	19	15	5	3

Total males, 53; females, 60.

The Terminal and Senile Dements, Imbeciles and Epileptics were merely taken home by their friends, unimproved. The Alcoholics made good recoveries, but there is no predicting when they would relapse through a return to their bad habits. I believe that the poisonous adulteration in liquors complicate this form of insanity, which is a true toxæmia in the beginning, and an organic disease later.

The hysterical for the most part never fully recover. They are inherently defective, but discipline will benefit them to a greater or less extent.

Mania and Melancholia are more hopeful forms, and doubtless one-half of those discharged may never have recurrences.

Paranoia is balanced between imbecility and hysteria, so far as recovery is concerned. A few cases under proper circumstances never relapse.

Paretic Dementia is, so far, absolutely hopeless, though I

believe very much more could be done for this kind of lunacy than has been thought possible in the past. During remissions paretics are often discharged.

The Primary Confusionals make the best recoveries and the most sudden. The stuporous slowly emerge, but in my opinion the predisposition to the latter form is in an abnormality of the circulation.

The Rheumatic and Syphilitic forms in their incipiency are the most curable psychoses.

The deaths this year among those who had been admitted before June 1, 1883, were mainly Terminal Dements, who among the males were maniacs and among the females melancholiacs after a residence in the asylum varying from a month to six years.

There are few differences in the ages to which the chronic insane live as they pass toward terminal dementia, but the paretics seldom pass the third year of their asylum residence alive. We have two paretics who have lived here over four years, and both are cases which began with locomotor ataxia. I have my doubts as to this so-called ascending paresis being correctly named. There are many differences between the insanity associated with this neurosis and the ordinary paretic dementia. Other asylum officials would do a service to medicine if they would note such cases apart, especially with reference to their differing in length of life from the genuine form.

Those who died from among the patients admitted after June 1, 1883, survived after admission as follows:

	Under 3 mos.		Under 6 mos.		Under 1 year.	
	M.	F.	M.	F.	M.	F.
Alcoholic Insanity.....	6					
Circular "	1					
Epileptic "		1			1	
Mania.....	5	3			1	

	Under 3 mos.		Under 6 mos.		Under 1 year.	
	M.	F.	M.	F.	M.	F.
Melancholia		9		2		2
Paranoia						1
Paretic Dementia	2	1			1	
Senile Dementia		2	1			
Stuporous Insanity		1				
Terminal Dementia	1	2	1		1	
Typhomania		1				
Totals	15	20	2	2	3	4

Total males, 20; females, 26.

Of those admitted during the year thus, 10 per cent. died in that year, and 25 per cent. were discharged, of whom one-fifth probably permanently recovered, the other 20 per cent. may return to this or some other asylum or remain at home unrecovered, but out of the 65 per cent who remained to swell the resident list, more will die or be discharged in succeeding years, so our estimates concern the events of this year alone, and have nothing to do with ultimate results.

The immediate cause of death of the insane is often difficult if not impossible to discover, and the omnibus "exhaustion" from the psychosis is unavoidably used in assigning a cause for death.

Cardiac failure, either through trophic changes in the heart itself or the pneumogastrics, is a common cause of death among the insane. Gradual or sudden dyspnœa or œdema ending in anasarca are prodromata of final illnesses.

Phthisis pulmonalis ended two melancholiacs, one of whom was a lactational case. It also was the cause of death in one case of mania in puerpero, and in three cases of simple mania. I found fatty degeneration of the heart in post-mortem examination of one paranoiac, one epileptic and one simple maniac.

One case of mania, which had made a good recovery from the mental trouble, died from typhoid pneumonia pending his discharge. That disease cut short the career of one paretic, and another of the same psychosis died of the pneumonic invasion which has been noted by alienists as so common an accompaniment of that form of insanity.

Anasarca concluded one case of hebephrenia, one of senile dementia, one of melancholia and one of epilepsy. One paretic dement died from facial erysipelas. Dysentery was the final sickness of one melancholiac and one alcoholic insane. Hemiplegia and stupor preceded the death of one senile dement, a condition always imminent where degenerate, as atheromatous, arteries exist. The same disorder was the forerunner of death in one paretic dement. One maniac was paraplegic just before he died. Two female melancholiacs emaciated to an extreme and gradually passed away from the effects of innutrition. One epileptic insane had a large steatoma in his brain, as reported in May last. He is the one mentioned as having died from fatty degeneration of the heart.

One maniac died from the rupture of a hæmatoma in the dura near the superior longitudinal sinus into the left paracentral gyrus of the cerebrum.

The brains of the typhomaniacs were dropsical and difficult to preserve for microscopical examination. Those of terminal dements were uniformly shrunken and with decided increase of the outer neuroglia layer, with atrophy of the nerve cells. In some the convolutions were shrunken and the fissures gaped apart, especially upon the left side of the brain. One case of imbecility in paretic dementia in a female had in addition to the usual lesions of paresis a warped cerebellum and distorted medulla. The left cerebrum was under weight in every case examined.

In chronic cases, where there has been exaltation to a great degree, extravasations from the smaller arteries were abundant, particularly along both sides of the superior longitudinal sinus in the exterior dura.

In a few cases hæmatoma auris was found as noted in reports of individuals, and always it was the left ear affected.

Female Case No. 341, now living here, is the only case of right hæmatoma auris I have seen, and the other ear subsequently became similarly affected, making it double. One small arachnoid cyst with serous contents was found in the cerebellum of a simple melancholiac, and a blood cyst in the base of the cerebrum of one secondary confusional from mania.

The melancholiac brains have been found to be very pale, but otherwise as not exhibiting any remarkable change from normal. Most cases of melancholia seem due to depressed blood conditions and the agitated forms toxæmic. One case of melancholia agitata was accompanied with Bright's disease, and I ascribe the mental condition to the toxic circulatory, notwithstanding the comparative rarity of such cases.

Cerebral pathologists are familiar with the leucocytic exudate into the arachnoid which covers the brain with a film of a creamy color. This, with thickening of the leptomeninges, I have noted in most cases of mania and its terminal conditions. In typhomania this is excessive.

As to the causes of the different psychoses, I have too many notes to be able to utilize them in this article. Predisposition has very much to do with the form the insanity will assume under similar causes. For instance, traumatism may cause dementia, melancholia, mania or paranoia, according to the inherited disposition of the individual and the nature of the lesion. Frontal head injuries accompany, if they have not directly

caused, many cases of paranoia without other apparent cause. Slight moral causes often precipitate paranoia where there was an inherited disposition toward mental weakness. Alcoholism preceded many cases of simple mania and a few cases of primary confusional, and it is an undoubted cause of the alcoholic form, without any other factor operative, though it is conceivable that an inherited predisposition to insanity would require less of the poison to establish it. Fright will cause epilepsy in one and melancholia in another. Katatonia seems to have its origin in the motor apparatus, and I incline to regard the stagy behavior and hallucinations of voices commanding rigidity as suggested to the mind by the forced attitudes, precisely as an excellent digestion and circulation suggests exhilerant ideas and causes one to see everything *couleur de rose*. I have found urea secreted in abnormal quantity from two cases in the cataleptoidal stage.

One case of katatonia followed typhoid fever; another a strumous condition; one was sunstruck before becoming katatoniac; one male and one female case were "peculiar" mentally from birth, the male upon admission showing phases of hebephrenia. I have noticed some of these patients complaining in the beginning of rheumatic stiffness of the joints before catalepsy and delusions appeared. Katatonia seems to be allied ætiologically to some muscular rheumatoid disease, though its origin may be in nerves or blood. As showing what predisposition will do toward changing the nature of a psychosis, Mary R., Case No. 307, would have been ordinarily a case of melancholia ex lactatione, but was a decided paranoiac with depressing delusions of persecution.

I sent a report of 105 MS. pages to the American Neurological Society, June 17, meeting in New York, embodying some researches I have made upon the vaso motor system, with

pathological applications and suggestions concerning the treatment of certain forms of insanity. The paper, entitled "Nervous and Mental Physics," will appear in the August, 1884, *American Journal of Neurology and Psychiatry.* The paper is much too lengthy to be fairly abstracted here, but something of its tenor may be noted in the following concluding words:

One of the most important practical deductions that can be made from a recognition of the full identity of nervous and mental processes, in my opinion, is the necessity for regarding *psychic pain and kindred aberrations as calling for treatment continuous and persistent*, based upon rational therapeutics. Melancholia, mania, etc., are but symptoms of grave bodily disease, and precisely as in peritonitis pain is a guiding symptom for therapeutic succor, there is just as great a demand for constant antagonism of destructive cerebral disease, of which psychic pain is as symptomatic as general pain is in peritonitis and rheumatism of other organic disturbances. Ergot, conium, opium, stimulants, etc., with *intelligent and humane* care of the insane, are powerful aids toward bridging over the danger which threatens the mind. The cyclical nature of many forms of insanity are as well marked as is the self-limitation of typhoid fever; but where resolution and reorganization of hepatic or pulmonary tissues need not endanger life, that of the brain tissue leaves its mark for all time upon the psychic life. Hence the invasion should be fought from the outset so as to limit the necessity for reorganization (which is often cicatricial) as far as possible. Every step of insanity should be contested. Sleeplessness, furor, convulsions, overwhelming grief or excitement should be allayed constantly and judiciously with the powerful therapeutic agents at our disposal. Even in so hopeless a psychosis as that of paretic dementia, I have known remissions to be prolonged by such treatment, and for

the time being the patient was capable of making provision for the future of his family.

If we are ever to be able to conquer this terrible malady, it will be through adopting some such measures as those mentioned, and never through the prevailing *laisser faire*.

ARTICLE IV.

A SYNOPSIS OF THE MEDICAL BOTANY OF ILLINOIS. *By* J. M. G. CARTER, M. A., M. D., PH. B.

There are few States, if any, that have a more extensive list of native medical plants than Illinois. The physician has a complete materia medica growing profusely all about him wherever he goes in the Prairie State. While we are acquainted with hundreds of medicinal herbs, we are as yet only partially acquainted with their physiological and therapeutical action. One principle is beginning to dawn upon us which has often been totally ignored in studying the medical properties of plants, and even yet it is scarcely fully appreciated. That principle is this: The medical properties of the plants of a genus are identical, differing only in degree; and the properties of different genera of the same family or order are more or less related. This statement is not contradicted by the fact that remedial agents belonging to the same botanical genus are successfully used to accomplish different results. An individual property may be so marked in one plant and so feeble in another as to make the administration of these drugs produce very different effects. Thus, if A, B, C, and D are plants of the same genus which are astringent, stimulant, tonic, and diuretic in their therapeutical action, A may be the best astringent, B the best stimulant, C the best tonic, and D the best diuretic in the genus. Hence in physiological classifications if the same plants occur in separate classes, they occur in a different order of arrangement in the different lists.

Attention to the principle before given would obviate the numerous quackish laudings of new plants as specifics for diseases which were previously treated on general therapeutical principles. There is a large field for investigation yet in this

department of medicine, and it would seem that great good could be accomplished if country physicians and others who have opportunity would each select a particular genus of plants and closely study their therapeutical relations and power. The heterogeneous facts so frequently given concerning medicinal agents are very confusing to a student, and not much less so to the physician. It is not possible at the present time to give an accurate physiological classification of vegetable remedies; but there is no doubt that faithful and patient study of their properties would enable us to make such a classification ere long. The field for investigation in Illinois is not less extensive than that of any other State. The following list includes all the plants of the State, so far as I am aware, that have been used in the treatment of any form of disease, either by the profession or in domestic practice. The medical properties given are those dependent upon the physiological action of the plant when that is known; but it must be admitted that the information upon this point is but too meagre. The common English names are given in parenthesis; naturalized or adventive species are written in italics.

Order Ranunculaceæ. (Crowfoot family). 11 genera, 26 species. Genus Clematis (Virgin's-Bower), C. viorna (Leather-flower); C. Virginiana (Common Virgin's-Bower). Med. prop.: Acrid, vesicant, stimulant, diuretic, sudorific.

Genus Hepatica. (Liverwort, Liverleaf). H. acutiloba (Sharp-lobed Hepatica or Liverwort); *H. triloba* (Round-lobed H. or L.). Med. Prop.: Mucilaginous, astringent, pectoral, hepatic, tonic, deobstruent, diuretic.

Genus Anemone. (Wind-Flower). A. cylindrica (Long-fruited Anemone); A. nemorosa (Wood A.); A. patens (Pasque-flower); A. Virginiana (Wind-bloom, Virginian A.). Med. prop.: Acrid, corrosive, rubefacient, emetic, cathartic, diuretic.

Genus Thalictrum. (Meadow Rue). T. dioicum (Early Meadow Rue); T. anemonoides (Rue Anemone, Poor-man's rhubarb). Med. prop.: Purgative, diuretic.

Genus Ranunculus. (Crowfoot, Buttercup). *R. acris* (Tall Crowfoot, Buttercups, Crowfoot-Buttercup); R. aquatilis (Common White Water-Crowfoot); R. abortivus (Small-flowered Crowfoot); R. Flammula (Smaller Spearwort); R. Pennsylvanicus (Bristly Crowfoot); R. repens (Creeping Crowfoot, Common C.); R. sceleratus (Marsh C., Cursed C.). Med. prop.: Very acrid, counter-irritant, vesicant, narcotic, emetic, anti-scorbutic.

Genus Hydrastis. (Yellow Root). H. Canadensis (Yellow Puecoon, Golden-seal, Orange-root). Medical properties: Tonic, antiperiodic, laxative, cholagogue, detergent, alterative, diuretic, antiseptic.

Genus Actæa. (Baneberry). A. alba (White Cohosh, White Baneberry); A. spicata (Baneberry, Red Baneberry). Medical properties: Slightly acrid, purgative, emetic.

Genus Cimicifuga. (Bugbane). C. racemosa (Black Cohosh, Black Snake-root). Medical properties: Alterative, nervine, expectorant, emmenagogue, diuretic, anti-rheumatic, narcotic.

Genus Caltha. (Marsh Marigold). C. palustris (Marsh Marigold, erroneously called Cowslips). Medical properties: Mucilaginous, expectorant, pectoral.

Genus Aquilegia. (Columbine). A. Canadensis (Wild Columbine); *A. vulgaris* (Garden Columbine). Medical properties: Diuretic, emmenagogue, tonic, sudorific, discutient, diaphoretic, antiscorbutic.

Genus Delphinium. (Larkspur). *D. consolida* (Field Larkspur, Stagger-weed, Common Branching L.); D. exaltatum

(Tall L., Tall Wild L.). Medical properties: Diuretic, emmenagogue, vermifuge.

Order Magnoliaceæ. (Magnolia Family). 2 genera, 5 species:

Genus Liriodendron. (Tulip Tree). L. tulipfera (Tuliptree, White-wood, Poplar, Yellow Poplar). Medical properties: Aromatic, bitter, tonic, stimulant, diaphoretic, antiperiodic, vermifuge.

Genus Magnolia. (Magnolia). *M. grandiflora*, *M. glauca*, M. acuminata (Cucumber-tree); M. umbrella vel M. tripetala (Umbrella-tree). Medical properties: Aromatic, bitter, tonic, stimulant, diaphoretic, astringent, antiperiodic, antirheumatic.

Order Anonaceæ. (Custard Apple Family). 1 genus, 1 species:

Genus Asimina. A. tribola (Common Papaw, Custard Apple.) Medical properties: Mucilaginous, anthelmintic.

Order Menispermaceæ. (Moonseed Family). 1 genus, 1 species:

Genus Menispermum. M. Canadense (Moonseed, Canadian M., Yellow Parilla). Medical properties: Tonic, bitter, narcotic, diuretic, stimulant, alterative, laxative.

Order Berberidaceæ. (Barberry Family). 4 genera, 4 species:

Genus *Berberis*. (Barberry). *B. vulgaris* (Common B.). Medical properties: Tonic, laxative, cathartic, antiperiodic, refrigerant, antiscorbutic.

Genus Caulophyllum. (Cohosh). C. thalictroides (Pappoose wood, Blueberry, Blue Cohosh, Cohosh, Blue or Yellow Ginseng, Squaw Root). Medical properties: Stimulant, emmenagogue, diaphoretic, diuretic, antispasmodic, parturient.

Genus Jeffersonia. (Twin Leaf). J. diphylla (Rheumatism-root, Helmet Pot, Ground Squirrel Pea). Medical properties: Antirheumatic, antisyphilitic, diuretic, alterative.

Genus Podophyllum. (Mandrake). P. peltatum (American Mandrake, May Apple). Medical properties: Cathartic, cholagogue, alterative, resolvent, emetic, diuretic, diaphoretic, emmenagogue, vermifuge.

Order Nymphæacheæ. (Water Lily Family). 4 genera, 4 species:

Genus Brasenia. (Water Shield). B. peltata (Little Water Lily, Frog-leaf, Water Target, Deerfoot). Medical properties: Mucilaginous, pectoral, astringent.

Genus Nelumbium. (Nelumbo. Sacred Bean). N. luteum (Yellow Nelumbo, Water Lily, Pond L., Water Shield, Water Nuts, Water Chinquepin, Sacred Bean). Medical properties: Refrigerant, laxative, emollient, diuretic, diaphoretic.

Genus Nymphæa. (Water Nymph, Water Lily). N. odorata (Sweet-scented Water Lily, White Pond Lily). Medical properties: astringent, discutient.

Genus Nuphar. (Yellow Pond Lily, Spotterdock). N. advena (Common Yellow Pond L.). Medical properties: Astringent, demulcent, emollient, discutient, emmenagogue.

Order Sarracenaceæ. (Pitcher Plant Family). 1 genus, 1 species:

Genus Sarracenia. (Side Saddle Flower). S. purpurea (Pitcher Plant, Huntsman's Cap, Side Saddle Flower). Medical properties: Bitter, astringent, tonic, stimulant, diuretic, laxative.

Order Papaveraceæ. (Poppy Family). 4 genera, 4 species:

Genus Papaver. (Poppy). *P. somniferum* (Common Poppy, Opium Poppy). Medical properties: Narcotic, anodyne, stimulant, hypnotic, relaxant.

Genus Stylophorum. (Claudine Poppy). S. diphyllum (Horn Poppy). Medical properties: Fœtid, narcotic, lithontryptic, diuretic.

Genus Argemone. (Prickly Poppy). A. Mexicana (Mexican Poppy). Medical properties: Anodyne, diuretic, cathartic, emetic.

Genus Sanguinaria. (Blood-root). S. Canadensis (Red-root, Red Puccoon-root, Indian Paint). Medical properties: Emetic, sedative, hepatic, tonic, stimulant, diuretic, febrifuge, alterative, emmenagogue.

Order Fumarraceæ. (Fumitory Family). 2 genera, 3 species:

Genus Dicentra, D. cucullaria (Dutchman's Breeches); D. Canadensis (Squirrel-corn, Colic-weed). Medical properties: Antisyphilitic, diuretic, alterative.

Genus Fumaria. (Fumitory). *F. officinalis* (Common Fumitory). Medical properties: Bitter, tonic, alterative, diuretic, laxative.

Order Cruciferæ. (Mustard Family). 10 genera, 15 species:

Genus Brassica. *B. alba* (White Mustard), B. nigra (Black Mustard). Medical properties; Stimulant, emetic, rubefacient.

Genus Sisymbrium. (Hedge Mustard). *S. officinalis* (Hedge Mustard). Medical properties: Detergent, antiscorbutic, lithontryptic.

Genus Nasturtium. (Water Cresss). *N. officinalis* (True Water Cress), N. palustre (Marsh Cress). Medical properties: Stimulant, depurative, antiscorbutic, deobstruent, diuretic, hepatic, emmenagogue.

N. Armoracia (Horse-radish) belongs to this genus and has the same properties, but it is more frequently used as a rubefacient and a condiment.

Genus Erysimum. (Treacle Mustard). E. cheirawthoides (Treacle M., Worm-seed M.). Medical properties: Stomachic, vermifuge.

Genus Barbarea. (Winter Cress). *B. vulgaris* (Common

Winter Cress), *B. præcox* (Scurvy-grass). Medical properties: Plant—antiscorbutic, pectoral, detergent; seed—acid, lithontryptic.

Genus Arabis. (Rock Cress). A. Canadensis (Sickle-pod). Medical properties: Diuretic, antiscorbutic.

Genus Cardamine. (Bitter Cress). C. rhomboidea (Spring Cress). Medical properties: Diuretic, antiscorbutic, stimulant, condiment.

Genus Camelina (False Flax). *C. sativa.* Medical properties: Oleaginous, vermifuge.

Genus Capsella (Shepherd's Pense). *C. Bursa-pastoris.* Medical properties: Detergent, astringent, acrid, rubefacient.

Genus Lepidium (Pepper-grass, Pepper-wort). L. campestre; L. Virginianum (Wild Pepper-grass). Medical properties: Leaves—pungent, diuretic, alterative, antiscorbutic; seed—acrid, astringent.

Order Capparidaceæ (Caper Family). 2 genera, 2 species:

Genus Polanisia. P. graveoleus (Wormwood, Stinkweed). Medical properties: Vesicant, counter-irritant.

Genus Gyandropsis *G. purtaphylla.* Medical properties: Similar to last.

Order Violaceæ (Violet Family). 1 genus, 7 species:

Genus Viola (Violet, Heartsease). V. cucullata (Common Blue Violet); V. pedata (Bird-foot Violet); V. blanda (Sweet White Violet, American Sweet V.); V. canina (Dog Violet); V. sagiltata (Arrow-leaved V., Rattlesnake's V.); *V. tricolor* (Pansy, Heartsease, Johnny Jumpup); V. arvenis. Medical properties: Mucilaginous, pectoral, emollient, alterative, laxtive, emetic, cathartic, discutient, vulnerary.

(*To be continued.*)

EDITORIAL.

HEBRA'S CONTINUOUS TEPID-WATER BATH.

The continuous tepid-water bath occupies a prominent place among the elder Hebra's valuable contributions to general therapeutics. This bath consists of a large bath-tub, in which an iron frame with transverse slats is suspended by chains, so that the patient may be withdrawn from and returned to the water by means of a crank. The iron frame is covered with a horse-hair mattress, and furnished with comfortable pillows. The patient, perfectly nude—without any surgical dressing whatever—is placed in an easy position upon the mattress, and the bath-tub is filled with water of 30-31° C. temperature. A sensation of chilliness is usually experienced at this period, which is immediately dispelled by the rapid elevation of the water's temperature to 38-40° C. The temperature of the bath is permanently maintained at this degree by the continuous renewal of the water. A sheet, or other thin covering, may be thrown over the patient, and is useful by reason of its subjective effect.

The patient remains in the bath, day and night, except when withdrawn for the purpose of evacuation of the rectum or the bladder. There is no limit to the period of time which may be spent in the bath without detriment to the general health. Hebra has kept patients in the bath for periods of nine and ten months.

From this brief sketch it will be inferred that the pathological conditions which indicate the continuous tepid-water bath, are numerous and varied.

Burns, gangrenous wounds, bed-sores, and severe cases of pemphigus are notable examples of such conditions.

The best local treatment for burns,—especially when a considerable extent of surface is involved,—is to be found in the continuous bath. The terrible pain is relieved as by magic, psychic disturbance is quieted, and the patient frequently falls into a refreshing sleep. The intense *thirst*,—usually developed during the second stage,—is slaked, without the imbibition of liquids, which are rejected as soon as swallowed. Of course, in severe burns this method of treatment is too frequently of a merely palliative character; the patient dies in the bath just as he does under other methods of treatment.

When, however, death does not immediately follow the burn, we have a method of local treatment, at once simple, painless, and effective. "The water protects the wound surfaces from contact with the atmospheric air, prevents the decomposition of the sphacelus, and favors its separation; it makes every dressing and change of dressing unnecessary, limits the secretion of pus, and hastens cicitrization."—*Billroth.*

Gangrenous wounds,—especially the "puerperal ulcers" of the vulva and vagina, during the *puerperium;* bed-sores, from all causes, but particularly from spinal injuries, are influenced in the most favorable way. The patient is spared the distress and fatigue of all change of dressing, the wounds receive absolute antiseptic attention, and the attendants are relieved of much tedious and unnecessary labor.

Dermatologists very generally admit that grave cases of pemphigus find the best local treatment in Hebra's continuous bath. The pain, itching and burning sensations of this dis-

tressing affection are relieved, and comparative ease and comfort gained. In these cases the action of simple water is both palliative and curative.

As at present informed, there is no hospital in America in which the continuous tepid-water bath of Hebra is an accepted institution. It is difficult to give a good reason for such willful neglect of an invaluable therapeutic resource. The cost of construction and maintenance is relatively small, so that expense can not be pleaded as an extenuating circumstance.

A hospital, with a maximum capacity of ninety beds, has been recently constructed in Chicago. It is well endowed. Ten thousand dollars, we are told, has been recently expended upon surgical apparatus, and yet a case of universal burn cannot receive proper attention.

THE CHOLERA ABROAD.

The epidemic continues to advance, and there is now little hope of preventing its extension to the larger commercial and trading centers of Europe. Already several towns between Toulon and Paris are infected, and recent reports would indicate that the disease had appeared in Paris. All reports from a French source must be received with some allowance, as they have more or less of a commercial bias. The cry, "Don't call it cholera, lest it injure trade," is but an echo of the sentiment that in 1866 censured a medical college in this city, through the columns of the public press, for sending its class home after the loss of three of their number and the president of the faculty.

That there is nothing new under the sun is particularly true of the present epidemic. Most of our domestic and foreign exchanges have considered the subject at greater or less length,

but have thus far contributed to it little new or specially important.

At a recent meeting of the French Academy, M. Faurel, in his official communication, stated that the epidemic was not Asiatic cholera, but cholera nostras, due to the assembling of a large number of troops under bad hygienic conditions. This astonishing statement was made ten days after the epidemic had occurred. In closing his communication, M. Faurel assured the Academy, with characteristic French emphasis, that he had no doubt of the result (*i. e.*, the speedy subsidence of the epidemic), *mais je n'ai pas la pretention d' etre infallible*, and in the light of subsequent events there is but little doubt but that his brethren will agree with the latter statement. This discussion called forth a sharp criticism from Prof. Virchow in *Die Nation* of July 5. He arraigns the French government very severely for their inactivity in the early stages of the epidemic. One week after the first case appeared in Toulon, and while every day there was an increasing number of deaths, the French government remained strangely apathetic and no effort was made to prevent the spread of the disease. Whether it would have been possible to protect Marseilles is, in the opinion of Prof. Virchow, uncertain. But he clearly points out the failure of the French to make an early diagnosis, and their too confident reliance upon the pleasing assumption that it was only sporadic cholera. That they did not find the peculiar bacillus was no excuse for the error, as the diagnosis has been made many times before the bacillus was ever known.

Later, some physicians in Paris, who had too quickly assumed the sporadic nature of the present epidemic, announced that it was only a *mild form* of Asiatic cholera. What basis had they for the opinion that it was a mild form of the disease, or an epidemic that would soon pass away? Is there anything

in the history of past epidemics that will permit us to say that in this place, at such a time, the disease will be mild and will soon disappear? We think not. And yet it was on such premises that French sanitary officials allowed themselves to be lulled into a false security. The fact remains that the cholera was introduced by a French transport ship from Tonkin, and that through the apathy or ignorance of French sanitary officials the golden opportunity of stamping out the disease in its incipiency was lost.

The discovery of the bacillus has in no sense helped us to deal with the vital and practical points of the question. The probabilities point strongly to a bacterial origin of the disease, but the crucial test of inoculating animals has not succeeded, so the theory must still be held as doubtful, or at least not proved. That the peculiar bacillus may not be found in sporadic cholera is still uncertain, and helps to throw doubt on the theory. In the meantime we are left with a crowd of these unwelcome visitors knocking at our doors; our trans-Atlantic brethren presenting us nothing better than a possibility of a delay of two weeks for finding out what is the matter; and a brilliant leading article in the London *Students' Journal and Hospital Gazette*, advising us to use the opium and lead acetate pill after we have made the correct diagnosis! Do "they do *these* things better in France?"

CHICAGO AND THE CHOLERA.

When a stranger visits the city of Chicago for the first time, his earliest request is to be shown the "Water-Works and the Stock-Yards." These are the features for which the town has established a reputation. People who come to it from afar, from the Orient and the Occident, ask to see these wonders for

which the Mistress of the great Lake is famous. Some cities have a reputation for ancient statuary; some, for marvelous paintings; some, for musical culture; some, for rare pottery; some, even for *pate de foie gras!* But it is not for any of these that Chicago has become famous. It is for her Stock-yards and her Water-works.

We understand that at this time there is unwonted activity in and about the municipality, among editors, physicians, sanitarians, members of health-boards, and private citizens, on the subject of the possibility of an invasion of the city by the cholera scourge. In view of this wide-spread apprehension, and the precautionary measures resulting in the form of alley-cleaning, tenement-house inspection, etc., it becomes a duty as well as a pleasure to assure all who are interested, that Chicago will not and can not suffer from cholera. The basis of such a positive assertion is, as a matter of fact, to be found in the two things for which the city is famous. It is because of the Water-works and the Stock-yards.

The sacred singer of Israel once cried in a burst of poetic imagery, "Moab is my wash-pot!" Chicago might well echo with the refrain, "Lake Michigan is my wash-pot, my drinking-cup, and my chamber-pot!"

Her Water-works are indeed great. They supply her with water from the lake fully and freely, in fact, as fully and as freely as she restores to it again the refuse of her corporate body. If there be any germ of disease in her excreta, any virus lurking in her animal refuse, she receives it again in part, after it has been thrown off. If there be any potency in high dilutions, any truth in the doctrines of *similia similibus*, Chicago is safe from the cholera! If there be any virtue in the attenuation of a virus, such as has been demonstrated in the now famous experiments on rabies and fowl cholera, Chicago is,

without a shadow of a doubt, secure! It is the Water-works to which she is indebted for this priceless immunity. Her position is this: "I put my trust, not in disinfection, not in combustion, not in antisepsis, not in agents capable of destroying bacteria, but in two miles of lake water! That is the safe limit! Whether agitated by a boisterous storm, or as placid as a mountain-girt basin, these two miles shall stretch between me and all my sanitary sins! I will micturate, defecate, eject excreta, at one end of these two miles, and drink my water at the other, and I shall be safe! No wonder they come to see my Water-works! With these shall I not be cholera-proof!"

And there are those also who visit her Stock-yards! Not content with emptying her own ejecta into the lake from which she drinks, Chicago pours into it also the drainings from her immense cattle-yards, and from the great slaughter-houses where the animals brought to her doors from the whole of the Northwest are cut up and packed for the consumption of the world. The following is a description of the results of this great sanitary movement, which we clip from one of the daily journals, and which, from observation, we can declare to be within the bounds of sober truth:

"The South Fork is that fork of the South Branch of the Chicago River starting at Thirty-ninth and Halsted streets and emptying into the South Branch in Bridgeport near the pumping-works. It is about three miles in length and is the filthiest of all the branches of the river. The foulest, filthiest, deadliest section lies just north of the Union Stock-yards, and is about one mile in length, from 100 to 200 feet in width, and from nine to eighteen feet deep. It is wholly unprotected as to shade, there being no trees nor houses on either side, and when the sun shines upon it, it seethes and boils like a great cauldron of oil. To many intelligent people an inspection of the waters of this inland body would be a revelaation. The dark, seeth-

ing mass lying between the two banks of what was once a respectable creek cannot be called water. It is not refuse in its ordinary state. If it were white instead of black it might be taken for yeast. Its consistency in some quarters is about the same as paint, and when it comes in contact with the hull of a vessel it leaves a coating usually about an inch in thickness which has become known to the marine classes as 'Stock-yards paint.' Something of its character may be judged from the fact that water will not wash it off, and that the only way it can be removed is by taking the vessel into the dry-docks and using a steel scraper. Unlike the ordinary paint, it does not serve to prolong the use of timber, but, on the contrary, serves to hasten its decay.

"No living thing can drink this water and survive. It is a poison even to the grass that grows along the shore if poured upon it in large quantities. When used sparingly and mixed with other materials it serves as a fertilizer equal to bone phosphates and guano. Seen at a distance the surface of the water looks white, but a careful examination discloses that this is due to the bubbles which fill the scum, and that both it and the liquid are really as dark as stove-polish. The scum varies in thickness, depending upon the weather. The sun brings it up, and the wind sometimes drives it toward the pumping-works, two miles distant. A small quantity of it is sometimes carried away by the works, but much of it is again wafted back.

"At times this frothy portion, which is of the consistency of dough, forms a layer on the surface of the water two feet thick. Generally it is mixed with dead rats, dead dogs, dead cats, pieces of flesh, blood, and hair. An enterprising man has erected a lot of sheds near one corner of the Stock-yards, where he conducts a double-barreled business. Certain seasons, when the weather is not too warm, he gathers in acres of the scum, which is carried through a certain process by which it is relieved of the fatty substances. This has proven itself of great value to soapmakers, to whom several car-loads are sold each season. When the sun is too hot for this work, the soap-grease man turns his attention to the fertilizer business. Large quantities

of the filth is pumped into vats on the shore and evaporated. It is then sold to a large firm which mixes it with other materials and sells it for a fertilizer. When reduced and weakened by a mixture of bone dust it makes one of the richest improvers of worn-out soil yet discovered, but if used in its ordinary strength it would burn up everything planted near it.

"Many people suppose the South Fork is relieved by the Bridgeport Pumping-works, but the good the works do amounts to nothing at this point. The fork acts as a drainage for all large packing-houses in the vicinity of the Stock-yards. How feeble the effect of the pumping-works is may be appreciated when the fact is stated that the current of the fork, if a weary, inch-by-inch movement may be described by the use of that word, is in the opposite direction, toward a sewer, the opening of which is near Thirty-ninth and Halsted streets, and running towards the lake. Taking the statements of intelligent people whose interest in the locality have led them to study the subject, it is safe to say that this accumulation of rottenness never loses its character altogether, no matter what the season may be, and a history of the present mass would go back many years into the past.

"The effect of the stench depends upon the wind. In other words, it is naturally strongest in the face of the wind, and the people who live round about for a mile each way greet the changes of the weather-cock with alternate joy and sorrow. It is treated as a veritable river of death. On walking out in that direction the visitor unacquainted with the ground begins to feel that something strange and startling is about to happen, or has already happened. The situation is all the more difficult to comprehend if the wind happens to be blowing toward the river. Then it is difficult to comprehend why people going and coming hurry forward with such serious countenances. With many it has become a habit to quicken their footsteps as they approach the place, and they do so whether the wind comes that way or not, and the same pace is kept up on the other side until the place is cleared. Even when the odor is for a time suppressed the air for miles around seems heavy

and wanting in those elements which give ease and pleasure to the processes of respiration."

The witches' cauldron here correctly described, exhales its pestilential breath about two miles from the spot where some of the wealthy "packers" of this city have erected palaces which a king might envy, their costly stones overlooking the fashionable thoroughfare, where youth, beauty, premature age, and folly drive their showy equipages in a splendid ignorance of what is floating beyond! More than half a million men, women, and children have breathed in attenuation the vapors of this pestilential pool, and consumed the water, which in high dilution contains the power and potency of its multiplying germs. How idle to worry over any importation from Toulon, Marseilles, or other city of France, when Chicago has even more than can be imported, right at her own door! Shall she lament over the introduction of a few paltry rags from Egypt, when she has a greater rottenness in the grasp of her right hand! If the south fork of the Chicago river be not capable of destroying thousands where an imported pestilence could but kill its hundreds, it would not be part and parcel of this astonishing metropolis! No! Chicago will not have the cholera! She is protected by "vaccination" from a great deal worse! She has her wash-pot, her chamber-pot, and her drinking-cup in the great lake at her feet, and can look with a smile into the rheumy eyes of the Filth-Plague!

It is, however, true that Chicago *has* suffered from the cholera. But that was in an older time! Years after the scourge that once afflicted her had vanished, the boatmen on the river could see the relics of its grim repast in the ends of the rude slab coffins that projected from the sand-banks on either side the stream. But that was long before half a million of human beings and many more animals had converted the river into

an open sewer! They had no Water-works and Stock-yards in those primitive days! Then there was no "vaccination" process for protection. The untutored hunter of scalps and his friend, the Indian trader, then had their little stools down stream, and drank from the water above. Being thus quite unprotected, they fell easy victims to the foreign germ!

But to-day, as the dark shadow of the scourge falls across the Atlantic, it is so much lighter in effect than the south fork of the Chicago river, that the spot is even brightened by the reflection! Chicago has her Water-works and her Stock-yards! She is safe!

(Sanitary and other exchanges are welcome to copy!)

BOOK REVIEWS.

PRACTICAL MANUAL OF OBSTETRICS. *By* DR. E. VERRIER, *Lecturer on Obstetrics in the Faculty of Medicine of Paris. First American Edition, from the Fourth French Edition, with Revision and Annotations by* EDWARD L. PARTRIDGE, M. D., *Professor of Obstetrics in the New York Post-Graduate Medical School. April Number of Wood's Library; 8 vo., pp. xxi, 395. New York:* WILLIAM WOOD & CO. *1884.*

A *handbook* upon the art of midwifery is of questionable value, even when it is a methodical and exact *resume* of the principles and facts of the subject. When, however,—as in the present case,—the facts and principles of the art of midwifery are discussed without critical attention either to method or accuracy, its *raison d'etre* is clearly indemonstrable.

In the limited space at our command, we desire merely to allude to a few statements liable to criticism.

In the article upon the pelvic articulations, p. 6, the sacro-iliac and pubic articulations are termed symphyses, and no reference to synovial membrane is made in connection with the description of these joints. Luschka claims that these articulations are true joints, since the bones entering into their formation are expanded, covered by cartilage, held together by strong bands, or capsules, and the joint cavity is lined by synovial membrane. This view is sustained by the researches of Strauss and Muller of Vienna, in the demonstration of the

presence of true joints in the same articulations among the domestic animals, in whose parturitions they are of great importance.

The dimensions of the false pelvis, as given on page 9, do not agree with the measurements of Carl Braun or Charpentier. On page 13, the angle of the female pubic arch is said to be 76°.

On page 99, the assertion is made that in first positions of face presentations,—that is, in right mento-posterior positions,—"the heart sounds are heard, as in the first position of the vertex, at the left of the abdomen, where (Depaul) "the back of the fœtus transmits the heart-beats to the ear of the listener."

Modern obstetrical authorities support the doctrine of Carl Braun: [1] "The fœtal heart-tones are always heard on the sternal surface of the fœtus, and on that side of the maternal abdomen toward which the point of the chin is directed."

On page 136, we are warned against Crede's method of placental delivery, except when "the cord is ruptured, or is very delicate and friable, or again, when we suspect an abnormal insertion."

"In the fever of recently delivered women," we are told, on page 141, that the patient must not "have too much fresh air."

The uncontrollable vomiting of pregnancy is stated, on page 151, as an indication for the induction of premature labor.

Bleeding is recommended on page 156, in eclampsia; on page 170, in abortion; on page 171, in hemorrhage; on page 172, to check uterine contractions; on page 283, in version.

The portion of the book devoted to operative obstetrics is incomplete in its discussion of conditions and indications for operative procedure.

Professor Pajot's preface and tables constitute the valuable

1. Carl Braun's Lehrbuch, d. g. Gynækologie, p. 188.

portions of the book, and will be received by the medical public with great satisfaction. Dr. Leigh H. Hunt, the translator, has discharged his duty in a faithful and felicitous manner.

The notes of the American editor present, as a rule, a pleasant contrast to the text. We do not agree with him, however, in his advice on page 235, to convert the face into a vertex presentation. However successful such efforts have been in the editor's hands, the practice is emphatically condemned by the great obstetrical authorities of the day.

Typographical errors are numerous and inexcusable.

Finally, if judgment must be passed, we do not think the book entitled to high consideration as a fair exposition of the subject, viewed absolutely or in relation to obstetrical doctrines in France.

W. W. J.

Handbook of Vertebrate Dissection. Part III. *How to Dissect a Rodent. By* H. Newell Martin, d. sc., m. d., m. a., *Professor in the Johns Hopkins University, and* William A. Moale, m. d. *12mo., pp. 247. New York:* Macmillan & Co. *1884.*

This little book fulfills, with unusual freedom from fault, the function for which it was intended. As a *handbook* for use at the dissecting-table, it is a valuable acquisition.

It is a matter of regret with us, however, that the rabbit was not chosen instead of the rat. The former is the favorite animal in Germany, is peculiarly adapted to the purposes of physiological investigation, and is quite as abundant and widely distributed.

The text is remarkably free from technical and typographical errors.

We commend the book most heartily to our readers.

W. W. J.

SELECTIONS.

The regular quarterly meeting of the Illinois State Board of Health was held in its rooms in the Capitol Building, at Springfield, on Wednesday, July 2, 1884.

Present, at the afternoon session, Drs. Haskell, McKensie, Kreider and Rauch; Dr. Haskell presiding in the absence of the president; and at the evening session, in addition to the above, Newton Bateman, the president, in the chair.

Dr. Geo. N. Kreider, of Springfield, appointed to succeed Mr. Reen, of Peoria, resigned, was introduced to the members and took his seat with the Board.

The minutes of the last quarterly meeting, April 17 and 18, were read and approved; after which the regular order of business was suspended and the Board went into executive session on certain cases of colleges and practitioners, under the Medical Practice Act.

During the evening session the following quarterly report of the Secretary was presented:

QUARTERLY REPORT OF THE SECRETARY, APRIL 1–JUNE 30, 1884.—During the quarter ending June 30, 1884, there were received in the Secretary's office 604 communications, letters, papers, etc., exclusive of 197 diplomas submitted for verification, and the affidavits and other papers accompanying applications for certificates in 226 cases. There were sent out during the same period, 827 letters, postals, circulars, etc., and other communi-

cations, and the usual quantity of the Board's publications—reports, registers, preventable-disease circulars, epidemic disease blanks, forms of ordinances, etc. Two hundred and forty-two packages were received, and 212 sent out, by express. Seventy-three telegrams received and 102 sent.

Certificates entitling to practice medicine and surgery, under the Medical Practice Act, were issued to 170 graduates upon diplomas of colleges which have complied with the requirements of the Board, entitling them to be classed as in good standing, and to four upon length of practice in the State. Under the authority conferred upon the Secretary at the last meeting, seventeen applicants for certificates, holding diplomas of colleges which had not fully complied with the Board's requirements, have been notified that they would have to submit to examinations on the branches or subjects omitted by their respective schools. In nine of these cases the applicants have already been examined and certificates issued; five of these were examined in hygiene only; three in hygiene and general education; and one on all the branches, including general education. Three declined to appear to be examined and have left the State, and the remaining five are now awaiting their examination.

Examinations of five midwives have been made, and certificates issued to three of these, who passed successfully, and seven to others upon diplomas and licenses, or other recognized credentials.

THE MEDICAL PRACTICE ACT.—Since the last meeting of the Board, the Dr. C. Buell Rice, to whom a certificate was refused at the special meeting of January 30, has been tried and convicted of practicing in violation of the Medical Practice Act. The case was tried in the Sangamon County Court, May 19, before his Honor, Judge Matheny.

The defense set up the plea that, being a graduate of a "legally chartered medical institution in good standing," the defendant was entitled to a certificate; and that it was not competent for the Board to enquire into the moral or professional character of such graduates. On the part of the prosecution, it was shown that charges had been presented to the Board, alleging that Rice was in the employ of, and associated with, the "K. and K. Surgeons," a firm of advertising quacks, of Cincinnati and elsewhere, and that, in various ways connected therewith, as recited at the special meeting, January 30, his conduct was unprofessional and dishonorable, within the meaning and intent of the Medical Practice Act; that upon these charges the Board had refused to issue Rice a certificate until he had disproved the same; that instead of making any attempt at such disproof, Rice continued to practice; whereupon he was arrested for practicing without the necessary certificate. The facts were admitted by the defense, but, as already stated, the Court was asked to dismiss the suit on the ground that it was obligatory on the Board to issue its certificate to the possessor of a genuine diploma of any "legally chartered medical institution in good standing," regardless of the moral or professional status of the individual. This the Court declined to do, but found the defendant guilty, and assessed a penalty of $50.00 and costs. Notice of appeal was at once given by the attorneys for the defense, but this was subsequently abandoned, the fine and costs were paid, and this last representative of the "K. and K. Surgeons" has left the State.

While this decision again affirms the right and duty of the State Board of Health to inquire into and determine the status of individual practitioners, a decision by the Supreme Court of the State, rendered May 20, sustains the right of Boards constituted as is the State Board of Health to determine the status

of a college. Under the Act to Regulate the Practice of Dentistry in Illinois, the Supreme Court refused the petition of a dentist, one Isaac N. Sheppard, for a writ of mandamus to compel the State Board of Dental Examiners to issue him a certificate or license based upon a diploma of the Indiana Dental College. The Board refused the license upon the ground that the College was not a "reputable" institution. It was argued that the law constitutes the Board judges of the standing of a college, and there is no power of review vested in any other body.

"If the Board should arbitrarily or unreasonably abuse their discretion, and refuse a license without any reason therefor, there is a remedy for such abuse of discretionary power." But there was no ground for claiming that this was the case in the present instance. The Board, in its judgment, had decided that the curriculum of study and requirements for graduation of the Indiana Dental College were not such as to entitle it to be classed as "a reputable dental college," and there is no power in the law given to any person or body to review and set aside, or confirm, the exercise of this discretion by the Board. The petition for a mandamus was, therefore, denied.

It is also noted, in this connection, that two colleges which the Board has long refused to recognize as in good standing, have recently met with signal and final defeat in their efforts to secure a legal rehabilitation. The New York Court of Appeals has affirmed the judgment rendered by the Supreme Court of that State, about a year ago, in the case of the United States Medical College of New York, setting aside the charter of that institution. As this appeal was understood to be taken as a test case by the attorneys for the Buffalo College of Physicians and Surgeons, this decision is to be regarded as conclusive on this college also.

There have been fewer complaints, made direct to the Board, of unprofessional conduct, and fewer cases of this kind otherwise coming under observation, during this quarter than ever before in the history of the Board. The man J. E. Anderson, of the "American Surgical Institute," of Indianapolis, previously run out of Paxton, Tolono, and elsewhere, was arrested at Freeport, on the 9th of May, for practicing in violation of the law. The case was clearly made out, Anderson pleaded guilty, a fine of $50 and costs was assessed, which he paid, and at once departed for his Indiana home. A list of some fifty of his victims in the northern part of the State, has been furnished me. About the middle of June an itinerant, by the name of Riley, was arrested in Dixon for violation of the law, and was bound over for trial.

Two of the Chicago quacks, arrested for circulating obscene and indecent literature through the mails, have recently been tried in the United States District Court, and fined $200 each, with costs. One of these cases was an aggravated one, many of the vile pamphlets having been sent to school-girls at various places. I do not hesitate to pronounce the penalties inflicted in these cases as totally inadequate. Although the stereotype plates and the editions found were understood to have been destroyed, one of these men is already distributing his "Hidden Secrets." The only way to suppress these violators of public decency and morals is to imprison them.

MEDICAL EDUCATION.—At the annual meetings of the various medical organizations, State and National, which have been held during the past three months, the subject of the preliminary education of medical students has received more than usual attention. Almost unanimously, the individual members of the profession, and these various organizations as units (with one single exception), have pronounced in favor of exact-

ing proof of proper preliminary education before admitting candidates to the lecture classes. There is practically no opposition to the movement, the only dissentients now remaining being a few members of college faculties, influenced, probably, by a fear of diminishing classes. With few exceptions—and these diminishing in number from time to time—the better class of colleges have already adopted this requirement. Every announcement for the session of 1884–85, thus far received, makes this a distinctive feature; but it is to be wished that the colleges would state specifically in their announcements the kind of examinations applicants would be subjected to, or the proof of fitting education required, instead of merely saying, as some of them do, "a preliminary education is required," or making use of some similar vague generality.

As illustrating the wide-spread influence of the effort to heighten the standard of professional acquirements, it may be stated that, at a recent meeting of the Nebraska State Medical Society, the qualifications for admission to membership were so amended as to require that applicants must be graduates of colleges which in all respects conform to the standard of minimum requirements of this Board.

In the further interest of medical education, I think it the duty of the Board to exert its influence towards securing legislation for the proper and adequate supply of material for the study of practical anatomy. Colleges in this State have been embarrassed, during the past year or two, in their efforts to properly instruct their students in this most important branch; and the difficulty is increasing. Surgical knowledge and skill cannot be acquired without an intelligent practical study of anatomy; and in order to secure this, the methods and sources of the supply of material need to be more definitely recognized and regulated by law.

THE PUBLIC HEALTH.—Scarlet fever and small-pox prevailed to some extent during the first half of the quarter, mainly in the southern portion of the State. Except the few cases in Chicago and those in Kendall county, all the small-pox cases occurred in the south half of the State, but scarlet fever was more generally diffused. Both diseases have been of a mild type, with a moderate death rate. As the season advanced there has been the usual increase in the diseases of hot weather, but not characterized by any noteworthy features.

Although eight cases have been brought into Chicago from other places since January 1st, 1884, only one case was contracted from any of these by a resident of the city. Three of these eight cases were Indians brought in from the Indian Reservation; two were from Indianapolis; one from Cincinnati; and two from the town of Cicero—said to have been contracted from a tramp from Ohio. One of the Indianapolis cases reached Chicago four days before the appearance of the disease, and from him resulted the only case which originated in the city—a man with whom he slept one night contracting the disease from him. In no other case was there any spread of the disease; and the methods of dealing with cases as they appear, the details of disinfection, the general vaccinal protection of the community—especially of the 70,000 school children and the large number of poor people—are so thorough that Chicago, notwithstanding its immense railroad travel and large number of transients, has been, for many months, one of the safest cities in the Union in this respect.

At the close of the last quarter small-pox existed in Centralia, Marion county; Charleston, Coles county; and Coulterville, Randolph county. Owing to municipal neglect and a mistaken idea of economy, the disease obtained a foothold in Centralia, which it subsequently required great effort to over-

come, besides creating alarm and apprehension in neighboring communities. The disease was conveyed from this place to Irvington township, in Washington county; to Bellerive, in Jefferson county; and to Springfield. The first case in Centralia, it is stated, was treated by Dr. Alexander Jones, whose certificate the Board revoked at the January meeting, for unprofessional and dishonorable conduct. It is alleged that Jones treated the case without any of the necessary precautions; not reporting it to the authorities, nor in any manner guarding against spread of the contagion. The patient was treated during the entire illness in a room separated only by a curtain from a shoe shop on one of the most frequented streets of the town, and the shop was daily visited by numbers of persons. It is believed that all the cases in Centralia—32 in number, with 6 deaths—as well as those in Washington, Jefferson and Sangamon counties, are primarily due to the criminal conduct of this man. The Board has exhausted its authority in dealing with him by revoking his certificate, since he claims the exemption of the ten years prior practice clause of the Medical Practice Act. In charging him, however, with being primarily responsible, it is not meant to exonerate the municipal authorities from all blame; for, as early as the 8th of March, they were duly notified of the existence of a case resulting from this first concealed case.

From the tramp who carried the disease into Charleston, Coles county, as reported at the April meeting, there resulted five other cases, making a total of six cases and three deaths. The first of this last group of cases was a man who visited the tramp, denying that the latter had small-pox; in the usual time he came down with the disease, and died on the thirteenth day.

At Coulterville, Randolph county, also mentioned in my

last report, there were five cases, with one death in the first outbreak, which was caused by a negro roustabout who had contracted the disease on the river. Notwithstanding a rigorous quarantine of isolation and other precautionary measures, some obscure cases of varioloid followed this first outbreak; and, through failure to correctly diagnose the early cases of this second group, which were not characteristic, the disease still continues. The condition of affairs at this place, and a conflict of opinion as to some of the cases now under treatment, led me to visit the locality personally on the 28th of June, when I found two well-marked cases, one of small-pox and one of varioloid. The severer of these two—and which will probably prove fatal—was in Perry county, just over the line; but instructions were given the Coulterville authorities to extend their quarantine jurisdiction so as to embrace this case, and to vaccinate or revaccinate all persons in the compromised area, who had not been successfully protected within the last two and a half years. The spirit manifested by the village authorities, the physicians and the citizens whom I met, warrant the belief that this outbreak will now be soon suppressed. I communicated also with one of the county commissioners and the county clerk of Perry county, and the county commissioners of Randolph county, and feel assured of their co-operation and assistance.

The outbreak at Yorkville, Kendall county, previously alluded to as having been first reported at the close of the last quarter, was due to a young man recently arrived from New Orleans, who had an unrecognized case of varioloid. A large number of persons were exposed before the facts were known, and a total of nineteen cases, with four deaths, resulted. So much excitement was caused by the first group of these, some fourteen in number, eleven of which appeared in rapid succes-

cession between March 27th and April 2d, and in several localities, that I found it necessary to visit the town personally. The published instructions of the Board were thoroughly carried out, a supply of vaccine virus was obtained, and all unprotected persons were at once vaccinated. Notwithstanding the number of the centers of infection, only five more cases resulted—the last being after an interval of fully a month. The speedy suppression of the outbreak, which promised to be very serious at the date of my visit, was due to the prompt and efficient co-operative action of the authorities of the four separate jurisdictions in which the cases appeared. The detailed reports of these cases have been received, and from them the usual state of facts concerning vaccination is found; that is, that of the four fatal cases, three had never been vaccinated at all, and the remaining one had had small-pox when young, and had been vaccinated "seven or eight times unsuccessfully—it never would work"—owing probably to the previous attack of small-pox, the protection from which seems to have been exhausted prior to this last exposure. Of the fifteen who recovered, two had never been vaccinated at all; one, not until after the febrile stage of the disease had begun; and four others, not until after exposure. All these recovered, as did also the remaining eight who had been successfully vaccinated at various periods prior to exposure. None of those attacked had ever been revaccinated.

There have been seven cases of small-pox, with two deaths, among colored steamboat hands at East St. Louis, all contracted on the river. These cases were removed as soon as discovered, from time to time, to the St. Louis small-pox hospital; and about the last of May I received a communication from the Health Commissioner of St. Louis, stating that the East St. Louis patients were the only ones then in the hospi-

tal, and that the institution was kept open solely for the benefit of the latter place. While this is technically true, the relations of the two places are such that what is done for the one, in such a matter as this, is really done for both. However, I again visited East St. Louis and discussed the situation with the authorities, and am glad to be able to state that a Board of Health has since been organized, and the burial-permit ordinance prepared by the Board has been adopted.

Isolated cases of the disease have also occurred during the quarter at Mound City, Pulaski county—one case, probably contracted on the river, no spread; Red Bud, Randolph county—one case, contracted in Cairo, no spread; in Irvington township, Washington county—two cases, contracted in Centralia, and one from these in the person of the nurse, who had had the small-pox when young; at Bellerive, Jefferson county—one case, contracted in Centralia, no spread; in the country, six miles north of Nashville, Washington county—one case, contracted in Coulterville, and from this four more cases in the same family; in Ashmore township, Coles county—one case, contracted in nursing an unreported case on the county poor-farm, patient had had small-pox when young; and in Springfield, Sangamon county—one case, contracted in Centralia, and not recognized until after death, so that there will probably be other cases from this, although the usual precautions were at once taken, when the character of the illness was discovered. At the close of June another group of three cases is reported in East Fork township, Clinton county, five miles southwest of Patoka, and sixteen miles north of Centralia, where the disease was contracted.

Although the contagion has been repeatedly introduced into Illinois from without, during the past winter and spring, we have been fortunate in escaping it by immigrant introduction,

thus far. Neighboring States have been less favored—Iowa, for example, having now a serious outbreak, upwards of 20 cases in one county—all among emigrants landed at Baltimore, from the steamer *Salier*, of the North-German Lloyd's Line. The want of appropriations, whereby the National Board of Health might continue its Immigrant Inspection Service, is seriously regretted.

With regard to further action concerning small-pox, in view of the probability of its epidemic spread from abroad, as shown by its increasing prevalence in London and elsewhere, and its frequent introduction into the State from neighboring States, I would suggest that it is desirable to call the attention of sanitary authorities and others to these facts and to the experience of the last few months, which shows that when the disease is introduced into a community where vaccination and revaccination were not thoroughly carried out during the recent epidemic, there is still danger of serious trouble. It is also important that County Superintendents, school-boards and others interested should have their attention again directed to the fact that the School Vaccination Order of the Board is permanent and continuous; and that its thorough enforcement is expected, so as to prevent any accumulation of unprotected or imperfectly protected scholars from term to term. To this end I think it necessary to again print and distribute copies of the Order, with necessary instructions, together with supplies of certificates and blanks for returns to be made through the county superintendents by the first of January next.

Cases of glanders and other infectious diseases among animals continue to be reported to the Board. On the 28th of June Dr. C. N. Cooper, of Batavia, Kane county, reports having a patient under treatment, suffering with glanders, and wishes instructions and advice as to his actions. The amended Pleu-

ro-pneumonia and Glanders Act has by no means relieved the Board of responsibility in these cases.

The public naturally apply to the health authorities in matters pertaining to health, and thus far the State Veterinarian is only reached in a large number of cases through this office. Whether legislation is necessary on this subject, and what form it should take, are matters which seem to require the consideration of the members.

CHOLERA.—An epidemic spread of Asiatic cholera now seems imminent. What is known as the Damietta outbreak failed to secure a foothold in Europe last year, and with the exception of a few isolated cases in Russia and one fatal case at the Smyrna lazaretta—all in July of 1883—it is believed that the disease from this outbreak was confined to the delta of the Nile. France, it is true, was threatened by the arrival at Havre of the steamer *St. Bernard*, in June last, with one case on board; but preventive measures were successfully instituted on that occasion and the evil then averted. About the first of May, 1883, the British troop-ship *Crocodile* was reported in quarantine at Portsmouth, England, having then had eight cases of cholera on board, six of which proved fatal; but on this occasion, also, the disease seems to have been confined to the infected vessel. The French have been less successful in their recent precautionary attempts, if it be true, as is now alleged, that the Toulon outbreak was due to a fatal case on board the transport *Montebello* from China—the infected clothing of the case not being destroyed. Later advices state that the disease was brought from Egypt in the troop-ship *Sarthe*. It has already spread to Marseilles, the villages above Toulon, and cases are reported in Italy and elsewhere.

Whether the disease will cross the Atlantic from the east will largely depend, of course, upon the efficiency of the meas-

ures employed to confine the contagion to its present localities. Very general activity is manifested by all the European governments and sanitary authorities; and it is to be hoped that they may prove successful, although the dissenting opinions of the English authorities as to quarantine may lead to friction between them and the Continental authorities. Meanwhile we are threatened not only from Europe, but from the opposite side of the globe, cholera seeming to be spreading in China, and to have broken out in Japan.

In view of this condition of affairs, I have thought it my duty, on behalf of the Board, to urge that the organization of the National Board of Health should be maintained, and have advised to that effect, hoping that it may be possible to still secure the necessary appropriation for this purpose in the Sundry Civil Service bill. Should cholera continue to spread on the Continent, it is more than likely to find an entrance into this country, despite the efforts which may be made by local and State authorities to exclude it by quarantine regulations. Want of uniformity, failure to co-operate, commercial considerations, and local conditions, all combine to impair the efficiency of any system of quarantine; and to the extent that these obtain, in the absence of a uniform system, is the danger of failure increased. The remedy, of course, is in the National control and administration of quarantine; and the present emergency furnishes another argument for the continuance of the National Board of Health, with adequate appropriations and increased power and authority.

As to what should be done by us as a Board in the present aspect of affairs, I would say that my own experience and observation lead to the conclusion that it is not judicious to place entire reliance on quarantine measures, no matter how administered, should the disease become epidemic in countries or

ports with which this country has close commercial relations. Asiatic cholera, although it may invade places in good sanitary condition, finds its most congenial habitat where filth in any form abounds. The best attainable sanitary condition—clean streets and premises; the prompt and proper disposal of organic refuse, night-soil and all forms of sewage; well ventilated habitations with dry, clean basements; a pure and sufficient water-supply; and good individual hygiene, including personal cleanliness, a proper diet, and regular habits of life—these are the best safeguards against Asiatic cholera, as they are against most diseases. If it should unfortunately appear in a locality whose sanitary condition is good, as thus outlined, there is every reason to anticipate its prompt arrest by well understood measures—thorough isolation of cases, disinfection of discharges, etc. Cholera is pre-eminently a disease to be fought by sanitation.

Professor Koch's recent researches, by which he has demonstrated the existence of the cholera bacillus, promise something in the way of special prophylaxis; and in so far as this is in a direction to which a great mass of empirical knowledge points, it may be worth while calling attention to this feature. I allude to the practical point, which Koch has demonstrated, of the development of the coma-bacilli in alkaline moisture, and its arrest or destruction by acids. If further experiments confirm this proposition, the preventive treatment of Asiatic cholera may come to be a matter of as much certainty as the prevention of small-pox.

As to our own immediate action in the premises, I have to suggest that the attention of sanitary authorities throughout the State be officially called by the Board to the necessity of promptly securing the best attainable sanitary condition of their respective localities.

A thorough sanitary organization of the State, with the view of improving its general sanitary condition, is one of the matters to which the Board may now profitably give its attention. The Board is now, at the end of its first term, in a position to give this subject more consideration than heretofore; and it is entirely possible that such an emergency may present itself as will make this of the first importance.

YELLOW FEVER.—With the exception of recent reports of the reappearance of the disease at Guaymas, Mexico, where it prevailed extensively last year, and of some increase in the number of cases in Havana, there is an encouraging absence of yellow fever indications in the South up to date. A conference of representatives of the Boards of Health of the Gulf States was held, at the request of the newly organized Louisiana State Board of Health, in New Orleans, on the 2nd, 3rd and 4th of June; the object of the conference being to bring said boards into harmony, and, if possible, to devise and recommend improvements in the systems of quarantine in vogue along the Gulf coast. Representatives of the General Government, of the Auxiliary Sanitary Association, and of the various commercial organizations of New Orleans, were also present by invitation. The proceedings were characterized by moderation and a gratifying display of mutual confidence and desire for thorough co-operation. Many practical suggestions were made, and, on the whole, the conference would seem to promise more of benefit than anything of the kind which has occurred of late years in that region—provided, the means necessary to put into effect the wishes and intentions of those concerned be forthcoming.

Meanwhile, as already stated at our last meeting, the Sanitary Council is prepared to adopt, if it should become necessary, the same line of action in regard to the prevention of the

introduction of yellow fever, or other epidemic diseases, into the Mississippi Valley, as that pursued in 1883.

SANITARY CONFERENCE.—In accordance with the authority given at the last meeting, I attended the conference of representatives of State Boards of Health, held during the recent session of the American Medical Association in Washington. An organization was effected, officers elected, and plans adopted for securing co-operative action by the various Boards in the event of any emergency arising which threatens the sanitary interests of any of the States in common. Meetings will be held during the annual sessions of the American Public Health Association for the interchange of views and the furthering of the plans and objects of the organization.

THE FIFTH ANNUAL REPORT.—Continued delays in the public printing office have still further postponed the publication of the Fifth Annual Report of the Board; but a full force of compositors is now at work upon it, and assurance is given of its speedy completion.

The material for the Sixth Annual Report is in an advanced state of preparation, and together with the Revised Official Register of Physicians and Midwives, which is also nearly ready, will be put in the printer's hands as soon as the Fifth Annual Report is out of the way.

All of which is respectfully submitted.

JOHN H. RAUCH,
Secretary.

At the conclusion of the reading of the Secretary's report, which was accepted, and ordered placed on file, the following resolutions were adopted, looking to putting into effect the various suggestions embodied in the report.

Resolved, That the importance of the study of practical anatomy, as a foundation for surgical knowledge and skill, demands

that the supply of material for this study be more definitely regulated, and its necessity recognized by law, and that the Illinois State Board of Health respectfully urges the attention of law makers to these considerations.

Resolved, That the increasing prevalence of small-pox in London and elsewhere, indicating a probable renewal of this epidemic tendency, and its frequent introduction into Illinois from neighboring States, within the past few months, make it desirable that vaccinal protection be secured as fully as possible in every portion of the State; and to this end the Secretary is hereby authorized to call the attention of the sanitary authorities and others to the subject; and to take the necessary steps to push the further enforcement of the School-Vaccination Order of the Board, so that all new scholars, and those who have not heretofore fully complied with its provisions, may be properly protected against small-pox before the advent of cold weather.

Resolved, That while epidemic cholera may be excluded from this country by thoroughly-enforced quarantine regulations, yet the best attainable sanitary condition of every locality in the State should be secured, so that, in the event of Asiatic cholera effecting an entrance, notwithstanding quarantine, the disease may be met and fought under the most favorable circumstances. The Secretary is, therefore, hereby authorized to take such action as, in his judgment, will most promptly obtain a thorough sanitary organization of the State and the adoption and enforcement of the measures necessary to improve its general sanitary condition.

On motion of Mr. Haskell, the Secretary was given discretionary authority to act for the Board in any case of emergency which may arise in the interims between the regular meetings.

During the executive sessions the cases of a number of colleges, with reference to the requirements of the Board and their standing under the Medical Practice Act; the important feature of the office correspondences during the quarter; and the cases

of a number of practitioners, were considered, and the necessary action was taken in a large number of these.

The following certificates were ordered to be revoked:

Certificate No. 913, issued to Peleg W. Blakeley.

Certificate No. 1103, issued to Fritz Tripple.

Certificate issued to William Becker.

Certificate No. 3190, issued to S. Meyer.

After the transaction of sundry routine business, auditing of accounts, etc., which occupied the hours of the morning session, the Board ajourned at 11:30 A. M.

BERLIN, 13 June, 1884.

Dear Sir:—The Berlin Polyclinic begs you, in the interest of those medical gentlemen anxious for an opportunity of going through a course of training in special subjects, kindly to copy the following in the editorial columns of your valuable paper.

Clinical courses, comprising all the different special branches for practical physicians, are held every month in the Polyclinic at Berlin (Germany), Carlstrasse 30. The courses always commence on the first week day of the month. They last a whole month and are held every working day.

The number of participants is limited to six for every course. Should more than six apply for the same course, an extra—or parallel—course will be formed.

To all those physicians wishing to perfect themselves in a special branch, the opportunity is given to serve three months as assistants in that particular branch. Those gentleman having served as assistants will be allowed in appropriate cases to conduct the extra or parallel courses.

We intend to elevate the Berlin Polyclinic to an international medical school for the improvement of physicians of every country. In order to have the courses conducted in foreign languages, assistantships will be conferred also to foreign physicians.

Yours, very respectfully,

DR. LUDWIG LOEWE,

Surgeon-General of the Berlin Polyclinic.

AMERICAN MEDICAL ASSOCIATION.

PHILADELPHIA, June, 1884.

Dear Sir:—At the meeting of the American Medical Association, held at Washington in May last, an Amendment to Regulation II. was adopted, which provides that—

Membership in the Association shall be obtainable by any member of a State or County Medical Society recognized by the President and Secretary of said Society; and shall be retained so long as he shall remain in good standing in his local Society, and shall pay his annual dues to the Association.

You will perceive that, as far as such opportunities are embraced, the strengh of the Association will be increased and consolidated, so as to unite the profession and give it a force and influence not otherwise attainable. Without undertaking, however, to point out the advantages of this action on the part of the Association, or to advocate the plan of which it is a main feature, it may simply be said that, as the new departure has been taken, it is for the Association and its constituent bodies to carry it out to the fullest extent, and to give the movement their hearty co-operation.

Toward this end, the first step is to make the action of the Association as widely known as possible; and you are, therefore, requested to bring the matter to the notice of your Society and its individual members, either by circular, or in such other way as may seem to you most effective for the purpose.

Applications for membership, in the manner specified above,

accompanied with FIVE DOLLARS for annual dues, should be sent directly to the Treasurer, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa.; on receipt of which the weekly Journal of the Association will be forwarded for one year to such member. Respectfully yours,

WILLIAM B. ATKINSON, M. D.,
Permanent Secretary.

[Copies of this circular have been sent to the mayor (or presidents of village boards) of 644 cities, villages and towns in this State.]

ILLINOIS STATE BOARD OF HEALTH,
OFFICE OF THE SECRETARY,
SPRINGFIELD, July, 1884.

DEAR SIR:—At the recent meeting of the State Board of Health, held in Springfield, July 2d and 3d, 1884, the following resolution was adopted:

Resolved, That while epidemic cholera may be excluded from this country by thoroughly enforced quarantine regulations, yet the best attainable sanitary condition of every locality in the State should be secured, so that in the event of Asiatic cholera effecting an entrance, notwithstanding quarantine, the disease may be met and fought under the most favorable circumstances, and the Secretary is, therefore, hereby authorized to take such action as in his judgment will most promptly obtain a thorough sanitary organization of the State, and the adoption and enforcement of the measures necessary to improve its general sanitary condition.

It is entirely possible that we may escape a visitation of Asiatic cholera this year, although there is yet plenty of time for the disease to reach our shores before the cold weather. But even if there were no danger from this source, it should be remembered that everything which is done in the direction

of sanitary improvement benefits the general health, reduces the amount of sickness, and lessens the death-rate. An obvious duty, therefore, rests at all times, but more urgently at present, upon those charged with the administration of public-health affairs to take such steps as may be necessary to remedy any defects in the existing sanitary status.

To this end a general inspection of the entire territory under your jurisdiction should be made forthwith; and all nuisances, or other conditions injurious to the public health, which may be disclosed by such inspection, should be promptly abated. Especial attention should be paid to—

First—The condition of the water-supply.

Second—The disposition of night-soil, garbage and sewage.

Third—The cleansing of streets, alleys, and other public places.

Fourth—The supervision of food-supplies, and of market-places, slaughter-houses and similar establishments.

Fifth—The general sanitation of every house and its surroundings.

1. Water is one of the commonest mediums through which cholera spreads; but, aside from this, typhoid and malarial fevers, diarrhea, dysentery and other diseases, are caused by impure and polluted water. Hence the necessity of protecting the supply from contamination by surface-washings and drainage of filthy soil or premises, or of water from manufacturing establishments, or by seepage through the ground from privy-vaults, cess-pools, etc.

2. Night-soil, garbage, sewage, and all other forms of decomposing organic matter, are highly prejudicial to health, and their foul odors are indications of danger. The various methods for their proper disposal, so as to render them harmless, are well understood, and should be enforced according to the varying conditions of each locality.

3. Clean streets and alleys, and gutters properly drained and kept free from unsightly and filthy accumulations, are of even

greater importance during the heat of summer than at other times. The healthy condition of the atmosphere of a locality largely depends upon the condition of its thoroughfares.

4. The rapid decomposition of most articles of food during hot weather—the tainting, souring, wilting or rotting processes—and the derangements of the stomach and bowels caused by the use of such food, indicate the necessity for special supervision at this time of all food-supplies, and of the places where they are prepared, stored, or disposed of.

5. The foundation of healthy living is, obviously, the individual home and its surroundings. Houses, cellars, yards and out-buildings should be carefully inspected, and all accumulations of garbage, refuse and filth of every description should be removed, or, where this is not practicable, they should be rendered harmless by appropriate treatment. No house or premises can be healthy without proper drainage. If this cannot be secured by sewers or underground drains, then recourse should be had to surface drains, so as to prevent the possibility of stagnant water under the dwelling or its vicinity. Cellars should be dry, clean and well ventilated, so that they may not generate foul air to be drawn up through the house.

It is desired that this work of inspection, and remedying of evils and defects, be begun at the earliest practicable moment; and a preliminary report be made to this office, covering, in a general way, the existing sanitary condition, and the measures adopted and enforced for its improvement.

In connection with this report, information concerning your public-health provisions is also desired. I have, therefore, to request the names and addresses of your health commissioner, health officer, members of the board of health, or kindred officials; and copies of your health laws, ordinances, rules and regulations, etc.

With this information from every part of the State, the Board will be able to secure concert of action, and to direct,

intelligently and efficiently, whatever measures may be found necessary should, unfortunately, any emergency arise requiring such action.

Forms of health ordinances, adapted to the various organizations of villages, towns and cities in the State, are now being prepared, and copies of the same will be furnished on application.

Confidently anticipating your early attention to this matter, in the interest of your community, I am,

Very respectfully,

JOHN H. RAUCH, *Secretary.*

SELECTIONS.

GUN-SHOT WOUNDS OF THE SMALL INTESTINES. *By* CHARLES T. PARKES, M. D., *Professor of Anatomy in Rush Medical College, Chicago, Ill.*

[*Address of the Chairman of the Section on Surgery and Anatomy.*]

[*Continued from July Number.*]

Eleventh. Is not the moral effect of the assurance to the patient, that he will be placed in a condition most likely to lead to his recovery, a good substitute for the mental depression accompanying the general and popular conviction that these wounds mean certain death?

EXPERIMENTS ON GUN-SHOT WOUNDS OF THE ABDOMINAL CAVITY.

[*Appended to Dr. Parkes' Address.*]

EXPERIMENT NO. 1.

Wednesday, November 14, 1883.—Long, lean and lank setter; about 30 lbs.; in rather poor condition. Etherized with common ether and shot through abdomen with a No. 32 cal. ball, which passed directly through anterior wall to the innominate bones. Upon opening abdomen found ileum perforated about the middle and at the ileo-cæcal valve, and slightly grazed at another point. Extravasation of intestinal contents at each perforation. Some entozoa. The two perforated regions were resected and continuity of ileum re-established by Lembert's intestinal stitch. The grazed portion was closed by continued suture. Intestines washed with a feeble solution of carbolic acid, and returned to abdomen; and the external wound closed by two sets of sutures, one set through muscular walls, including peritoneum, and the other uniting the skin.

Drainage tube inserted, and wound dressed antiseptically with gauze, cotton, etc.

Entire operation lasted about one hour, and conducted antiseptically, abdomen being shaved, washed and irrigated with carbolized solution, etc. The animal waked considerably shocked. Gave rectal injection of alcohol and water (1-2 1-2), about 3 drachms, and in half an hour gave 10 drops of laudanum. The dog seemed very bright. At 6 P. M. was considerably weakened; respiration very rapid, with much febrile excitement. About three-quarters of a pint of warm milk per stomach-tube, twelve drops of laudanum, and about a quarter-grain of morphia hypodermically. Tied him under register well bedded in a large comforter, and covered him with a coat.

Thursday, November 15.—Dog died between midnight and morning. Post-mortem. Abdomen filled with bloody serum and intestines inflamed and badly smelling; kidneys a bright blue, and rectum filled with hardened fæces. Dog had vomited during the night a quantity of hair and some pieces of cartilage, etc. Died of shock. Wounds of intestine well agglutinated.

EXPERIMENT NO. 2.

Friday, November 16.—The ball (32) severed the aorta.

EXPERIMENT NO. 3.

Saturday, November 17.—(Ball 32 cal.) Dog etherized, shaved and shot very near abdominal margin. Upon opening abdomen (incision 3½ inch), but one loop of gut was found perforated. This was excised, and the continuity of intestine restored by eighteen individual silk stitches, which brought serous surface to serous surface, the greatest difficulty being encountered at the mesenteric attachment to the gut on account of the fat which lay between the two layers of peritonæum and adherent to the gut itself. Extravasation of intestinal contents. Tape worm.

Wound closed with heavy silk and dressed antiseptically. Gave 15 gtt. laudanum at night.

November 18.—Animal seems bright, but disposed to remain quiet, drinks plenty of water and urinates freely, Respiration hurried and febrile action high.

November 19.—Seemed very well, and partook of some milk during morning, but began vomiting in the P. M. a sour, watery and greenish fluid. Gave per rectum about ¼ grain morphiæ sulphas at night, and left him sleeping comfortably.

November 20.—Seemed quite lively and comfortable, the dressings having been removed the day before, and a large body bandage applied. About 11 A. M. seemed rather tired, and vomited large quantities of the same sour fluid as before; would not eat meat or drink milk, but drank water freely. Gave about ⅜ grain morphiæ sulphas hypodermically, and during the afternoon he seemed extremely sleepy and much disposed to lie down flat, but is nervous and easily alarmed by sudden noises, etc., etc. This condition lasted all day, and suppose it is the effect of the morphia.

November 21.—Died during night. Post-mortem showed a separation of the resection, which had evidently first torn out at the mesenteric attachment. Extensive peritonitis, intestines being agglutinated together and abdomen filled with fluid blood and fæces.

EXPERIMENT NO. 4.

November 23.—(Ball cal. 32.) Very large dog, weight about seventy-five pounds. Upon opening abdomen found a section of intestine for about six inches perforated in several places, the ball apparently having skipped along inside the gut; at another place the free edge was shot off and other portions of ileum grazed three times. The middle section was resected entirely, and closed perfectly; the shot edge was closed by trimming edge or side of the tube of intestine by a "V"-shaped

cut towards the mesenteric attachment, and that also was closed fairly well. This was close to the left end of the pancreas. Each opening showed extrusion of contents. Many worms.

The operation lasted two hours, abdominal wound closed by two sets of sutures, one set through the muscular walls, the other bringing the skin in contact. Wound was covered with cotton, and bandage applied. Gave 20 gtt. deod. tinct. opium and a little water. Seemed to be doing well all P. M., and at night at six o'clock gave about 20 gtt. more of the opium, and left some water where he could get it.

November 24.—Dog still alive and very thirsty, but vomits the water soon after drinking; gave another dose of opium at night.

November 25.—Bandages have not been changed.

November 26.—Changed dressings; dog seems bright. Gave pint of milk; also opium, which he drank readily, but soon vomited. Gave more milk about noon, which he retained. In the afternoon he seemed much weaker. Gave deod. tincture of opium gtt. 20 at night.

Still lives, but is not strong. Lies in any position in which placed, and seems quite prostrated. Opium as before seems to revive him; he refuses milk, but drinks freely of water, which the stomach promptly rejects. In the afternoon, being no better, removed dressings, and although wound was quite healed made an opening for medium-sized drainage-tube, and let out about a quart of bloody serum; re-dressed the wound after injecting a weak carbolized solution of warm water into abdomen through tube. Gave a rectal injection of alcohol and water (1-2 1-2) warm and gtt. 20 of opium. Is getting very poor, but respiration is regular; pulse very weak and rapid.

November 28.—Gave enema of soapy water very weak. Washed out wound and inserted short drainage-tube and fresh bandages. About eleven o'clock had a passage from bowels of a large quantity of black, tarry, and badly smelling fæces, result of injection per rectum. At 2 P. M. was very weak. Gave enema of whisky and milk, warm, about 2 oz., and made a stew of small bits of beef and milk in whisky, which he ate greedily. Gave milk and whisky per rectum every three hours, also Valentine's extract of meat.

November 29.—Seems much stronger; had a semi-liquid passage from bowels. Gave enema every four hours of Valentine's extract, milk and whisky; and also fed pieces of raw meat in milk.

November 30.—Steady improvement; another passage which evidently came from above seat of operation. Fed him on raw steak, and gave whisky per rectum every four hours. Sutures through integument have ulcerated their way out; were removed and dog allowed to lick his wound, as he promptly tears off all bandages.

December 1.—Feeding as before, with steady improvement.

December 2.—Another passage from bowels during night Gave meat, about one-half pound every three hours, which he eats greedily; marked improvement daily in strength and appearance.

December 3.—Same improvement.

December 4.—Sent dog down stairs in basement.

December 10.—Alive and apparently in perfect health. External wound closed completely.

December 11.—Seems sick; refuses to eat; howls at night.

December 12.—Has marked symptoms of tetanus, and is in a state of rigidity with episthotonos.

December 13.—Died, and post-mortem showed an obstruction of intestine by a large mass of meat or a collection of various substances of a gritty consistency which completely obstructed and occluded bowels for some distance. The bowel was opened above this, and abdominal cavity filled with intestinal contents, and organs all adhered, as result of peritonitis; resection wound quite strongly united. Dog died from careless feeding and obstruction following adhesion of knuckle of intestine to omental stump.

EXPERIMENT No. 5.

Monday, November 26.—(Ball cal. 32.) Medium-sized, well-conditioned and sturdy dog. Shot passed through a six-inch piece of intestine, making several perforations. Much fæcal matter free in abdomen, some opposite each opening. Many tapeworms.

November 27.—Made a resection of but one piece six inches in length, including both wounds. In this instance the larger silk sutures were used. After the continuity of the intestine was restored there was a great deal of bleeding from the interior of the abdomen, the origin of which could not find, but allowing the air to reach into all parts of the abdominal cavity, it ceased after considerable loss of blood. A portion of the omentum being filled with blood, it was ligated and removed. In closing abdominal wound was obliged to tear away a certain amount of fat which was closely adherent to interior wall of abdomen, along the line of the wound, in order to introduce sutures so they would not include the fatty mass. Introduced two drainage-tubes, and applied large pad of cotton. Gave some opium, about

gtt. 15. P. M. dog seemed considerably shocked, but was quite thirsty. At night gave more opium.

November 17.—Cotton was soaked with fluid from drain-tubes. Removed dressings, and, upon getting him upon his feet, a small quantity of fluid escaped. In the evening washed out the abdomen with a warm solution of carbolic acid, about $\frac{1}{2}$, and applied dressing of gauze. During the day he vomited considerable milk and water which he had drank, and was evidently very weak. Gave about gtt. 20 of opium at night. Died at 8 A. M. on November 28. Post-mortem showed that sutures had parted at mesenteric edge, and death was from peritonitis. Mortification of edges of resection.

EXPERIMENT No. 6.

December 5.—(Ball cal. 32.) Died of hæmorrhage, after being shot, from wound of renal arteries, the ball perforating one kidney. Several perforations of the small intestines, all of them showing extrusion of contents. One large, round worm free in cavity.

EXPERIMENT No. 7.

December 7.—Died under ether.

EXPERIMENT No. 8.

December 7.—(Ball cal. No. 32). Ball opened one of the mesenteric arteries, and after resecting three pieces of intestine, and closing wound nicely (every perforation showed fæcal matter, worms, etc.); she died in less than nine hours from the shock. Great loss of blood; died of loss.

EXPERIMENT No. 9.

December 10.—(Ball cal. 32.) Gave morphine hypodermically at 9 A. M. Medium-sized female dog. Anæsthe-

tized at 9 A. M., and shot at 9.30, first shot simply going through abdominal walls; second shot higher up and perforating spleen. Operation began at 10.15. Found abdomen full of blood, fæcal matter, and some worms. Removed spleen and large mass of omentum; ligated and removed one piece; resected about three inches in length; perforated in two places. Much hæmorrhage; operation concluded at twelve. Gave opium and whisky; much shocked. Died.

EXPERIMENT NO. 10.

A well-nourished bull-dog (female), about twenty-five pounds in weight. Was anæsthetized about 9.15 A. M., and then shaved over the abdomen. Was shot at 9.45 by a 32-100 calibre revolver just posterior to the umbilicus, the bullet entering on the right side about three inches from the median line, the point of exit being in the corresponding situation on the opposite side. On opening abdomen found animal pregnant. There was one wound through the right cornu of the uterus, rupturing the membranes of one fœtal dog, and allowing the escape of the amniotic fluid into the peritoneal cavity. One of the smaller mesenteric arterial branches was cut, and the small intestine perforated in one place. The abdomen contained considerable blood on opening immediately after the shot, and there was slight extravasation of fæcal matter from the gut at openings. The vagina and uterine ligaments were ligated by single carbolized silk ligatures, and the large gravid uterus removed. The hæmorrhage in the mesentery having been checked, the wound in the intestine was resected, about two inches being removed. The free ends were united with the interrupted silk ligature. The peritoneal cavity was sponged

out and washed with slightly carbolized warm water. The external wound was united with about ten silk ligatures, and dressed with iodoform and gauze, the whole being covered with oakum and bandaged. About half a grain of morphia was administered hypodermically; and at twelve the dog was allowed to come from the influence of ether. She showed marked symptoms of shock, but rallied in the afternoon. She died in the night. Post-mortem revealed hæmorrhage from the uterine stumps, and some peritonitis commencing.

EXPERIMENT NO. 11.

A full-grown, healthy-appearing dog. Etherized at 9.30 A. M. Abdomen shaved and cleansed. Was shot at 10 A. M., still under the influence of ether, the bullet from a 32 S. & W. revolver passing transversely through the lower part of the abdomen. Was placed on table and kept partially anæsthetized until 10.45. The animal then presented signs of extreme loss of blood, feeble respiration and heart's action, cold extremities, pallid gums, etc. Abdomen was opened by large crucial incision and found to be filled with blood. Bleeding was ascertained to come from a divided mesenteric artery, and was readily checked by ligature. Clots were turned out, and two wounds of small intestine found. But slight extravasation of contents of bowel into the cavity, still some matter and worms found at openings. The intestine was resected at the site of each wound, about three inches being removed in each place. The cut ends of each were then united by about twelve interrupted silk sutures, so placed as to bring peritoneal surfaces in apposition. Intestines were then returned to their place, the cavity sponged

out, and the external wound closed tightly with silk sutures. This was finished at twelve o'clock, the dog appearing moribund at its close, and remaining in a condition of collapse for about three hours. Reaction then took place, and he was able to stand and walk about. Second day, took some milk, which was vomited at once. This was repeated at intervals during second and third days. Dressings were changed on third day. No discharge from wound. On fourth day vomiting was increased, and was fæcal in character. Dog too weak to stand. Dressings changed again and wound found to be discharging purulent fluid. Died at 4 P. M. on fourth day. Post-mortem showed sero-purulent exudation in abdominal cavity, intestines glued together by adhesive lymph, wounds uniting well, and occlusion of the bowel in the neighborhood of one of them, from its having been sharply folded upon itself and bound in the position by the inflammatory exudate.

EXPERIMENT NO. 12.

December 27, 1883.—The bullet, 32 cal., entered the abdomen on a line corresponding to the junction of the anterior and lateral surfaces of the abdomen, just in front of the hind leg, its point of exit on the other side being on the same line a little above the umbilicus.

On opening the abdomen it was found that the lower part of the jejunum was cut in two places within two inches of each other, and that there was considerable blood in the peritoneal cavity from these cut surfaces, there being no mesenteric vessels cut; also fæces and worms.

Both wounds were included in the parts excised, and the cut ends of the intestines were fastened together by three

sutures, and then stitched to the abdominal parieties, thus forming an artificial anus.

Considerable shock was experienced, and owing to a desire to hasten the operation, the peritoneal cavity was not as carefully sponged as it should have been.

The dressing consisted of iodoform, protective and oakum. Of tinct. opii. deod. gtt. 20 were given by the mouth. The operation lasted two hours. On the following day he took a little nourishment; there was no tenderness, but some pus was squeezed from the point of exit of the bullet, the dog lying on that side.

Next day about one-half ounce of pus was forced from the point of exit of the bullet, the dog lying on that side, and by turning him on to the other side an equal amount was obtained from the point of entrance, but there was no suppuration from the wounds themselves.

He took a little nourishment and seemed to be in good condition, respiration being normal and pulse regular. He had a free urination from the bladder, and soft stools were passed from the artificial opening. He died during the night. Post-mortem revealed a large amount of septic material in the peritoneal cavity.

EXPERIMENT NO. 13.

Saturday, December 29.—(Ball calibre 32.) Medium-sized, middle-aged female dog. Gave with the anæsthetic about 3/8 grain of morphia hypodermically after shot. Abdomen found full of blood; seat of hæmorrhage found at one of the point of perforation, of which there were two; from these issued fæcal matter, gas and worms; a medium-sized mesenteric artery having been shot off. All the intestines were drawn out of abdomen for examination, and it was found necessary to resect two

portions which were a considerable distance apart, both places closing neatly and perfectly. Abdomen washed out and external wound closed by one set of sutures and a large pad of oakum laid over and held in place by roller first, and over all a many-tailed bandage. Gave 25 gtt. laudanum.

December 30.—Dog got loose during night and was running around very briskly; room very cold and disagreeable. (On the afternoon of the day of operation some person had opened the doors and windows and exposed the animal to a strong, cold draft for about two and one-half hours.) In the evening gave hypodermically morphine, when she vomited for first time and seemed very weak.

December 31.—Seemed lively and well all day; gave milk, which she would drink but could not retain. About noon gave an enema of Valentine's extract, and in the evening left a pan of milk.

January 1, 1884.—She seems as well as ever, but the floor of the room was profusely decorated with vomit. The milk was all gone. Gave an equivalent of an ounce of whisky, of alcohol and water per rectum, and left a supply of water, as she seemed very thirsty. Bandages changed for the first time since the operation. There had been but little discharge and the wound was in good condition. Applied a large pad of oakum and a wide roller as before.

January 2.—Seems quite exhausted. Gave alcohol and water (1-2 1-2) per rectum about four or five times a day in quantities of about 1 ounce; has a diarrhœa and vomits.

January 3.—Diarrhœa continues, but no vomiting. Has some appetite, and gave raw meat (steak) chopped fine, every two or three hours; also fresh milk, which she drinks readily.

January 4.—Seems quite well, and hungry; fed regularly and removed all dressings; wound in good condition. Removed

all stitches and did not apply dressing again. Appetite good.

January 5.—Dog is seemingly well; has a voracious appetite. Much wasted in flesh, but appears strong.

January 6, 7, 8.—Fed her upon milk; also meat chopped fine and raw.

January 9.—She seemed well enough to be sent down cellar, where she continues gaining strength and flesh.

January 15.—Is perfectly well. Recovery.

EXPERIMENT NO. 14.

January 9, 1884.—This dog was allowed some milk a short time previous to the operation, hence his stomach was distended.

The first bullet (32 calibre) grazed the abdomen walls, not entering the peritoneal cavity.

The second entered on a line corresponding to the junction of the anterior and lateral surfaces of the abdomen, a short distance in front of the hind leg, coming out a little nearer the median line, and two inches nearer the front leg.

On opening the abdomen it was found there was some hæmorrhage, mucus and particles of food in its cavity and on surface of stomach, and that the lower part of the stomach was wounded, the point of exit being two inches from the point of entrance, passing through the whole thickness of the stomach. There was no wound of the gut. The peritoneal surfaces were drawn together with cat-gut, by inverting the edges and using the continued suture.

Great care was taken in the *toilette du peritoine*. Immediately after closing the external wound he vomited half a pint of blood, mucus and milk. Time of operation was one hour and a half. Then he was given tincture of opii deod. gtts. xx.

The wound was dressed with iodoform, protective and oakum.

On the tenth was given nothing except a little water. On the eleventh he was given a little milk, which caused some dis-

turbance. On the sixteenth the stitches were removed and no dressing applied, there being but slight discharge from the wound made by the incision and none from the bullet wounds. Recovered.

EXPERIMENT NO. 15.

Small dog, female, was anæsthetized and shot at 10:30 A. M. (S. & W. revolver, 32 calibre.) First wound passed through abdominal muscles only. Shot again immediately, bullet this time passing transversely through middle of abdomen. Opening made at once by linear incision. But little blood in cavity. All bleeding stopped upon exposure of intestines to air. Five wounds of small intestine found, all showing extravasation of contents. Two resections of five inches each were made to include all wounds. Cut ends were united by a continued catgut suture in each place. Intestines returned and abdominal incision united by silk sutures, after thoroughly washing out cavity by 2 per cent. solution of carbolic acid. The operation was finished at 10:30 A. M. Dog was laid in a warm place, apparently suffering but little from shock. External wound dressed with iodoform, covered by protective carbolized gauze, tow and a bandage. Animal died in about twenty hours. Was not given any food or medicine in that time. Post-mortem showed some small blood-clots about the wounds in the intestine. No serum or other fluids in cavity, and no signs of peritonitis. Death from shock.

EXPERIMENT NO. 16.

A dog of uncertain breed, about twenty pounds in weight, was shaved over the abdomen and anæsthetized at 10 A. M. Was shot in the abdomen in front of umbilicus, the bullet entering on the right side and coming out on the same side about two inches nearer the median line, not entering the abdominal cavity or wounding the peritonæum. Was shot

again, the bullet entering on the right side, external and posterior to the first, and coming out on the opposite side, about two inches from median line. The calibre of the revolver was 32-100. Upon opening the abdominal cavity the peritonæum was found to be plowed across between the wounds of entrance and exit, and the spleen to be slightly nicked, the bullet having skirted the abdominal walls. The only hæmorrhage was from the external wounds and the spleen and track of bullet. The spleen was removed, its peritoneal connections being ligated by five silk ligatures. The small intestine was resected, about four inches being removed. The abdominal cavity was washed with warm carbolized water. The external wound was sewed up by about ten sutures. The dog came from under the influence of ether at 11:30 A. M. The wound was dressed externally with iodoform and oakum, and fifteen drops of deodorized tr. of opium administered by the mouth. A curious phenomenon was observed upon cutting out the spleen. The stomach and intestine became distended enormously with gas, extruding from the abdominal cavity and covering a large area of the operating-table. They were with difficulty returned with steady pressure. The dog died in the night from shock and hæmorrhages from splenic stumps.

EXPERIMENT NO. 17.

January 23.—(Ball cal. 32.) Good-sized coach dog. Bullet passed through abdominal walls without wounding intestines and just entering the peritoneal cavity, as was found after opening abdomen, the point of entrance and exit being on either side of the middle line and five inches apart. Removed the major portion of the greater omentum and also resected about six inches of the ileum and closed the wound by five sutures, the external wound being but two inches long.

January 24.—Seems inclined to be quiet all day; had de-

fecated during the night and urinated very little; drinks but little water, and does not vomit it. Is by nature a very frisky dog, and do not think his extreme quiet very favorable.

January 25.—Seems quiet; no bloating of abdomen; removed bandages; re-applied dressings. Refused milk all day; also water.

January 26.—Gave small quantity of milk in the afternoon; re-applied the dressings which had been removed the day before; found the bullet wounds much puffed up, and that the stitches had slipped in two places, leaving a hole opening into abdomen large enough to admit little finger. The portion of intestine viewed through opening in external wound looked red and inflamed, but not badly so; little running from the wound. Filled it with iodoform and applied pad of oakum.

January 27.—Gave about one-half pound of meat and a quart of milk; seemed to be ready to get well.

January 28.—Fed meat and milk during day, and he seems to be rapidly getting well.

January 29.—Wound gaping, but discharged him to the cellar. Recovered.

EXPERIMENT No. 18.

January 25, 1884.—This dog, a black and tan bitch, having been shaved the day before, was anæsthetized and shot.

The bullet, 32 calibre, passed directly through the abdomen about its middle, piercing the gravid uterus in two places, and cutting the gut longitudinally. No large vessels were cut. The uterine attachments were ligated *en masse* and the uterus removed. Contents of bowel found at site of wound in intestine.

During the time that an excision of the gut was being made, a profuse hæmorrhage occurred from the uterine stumps, before they could again be ligated by passing a suture through and ligating one-half at a time, the animal was almost exhausted from hæmorrhage.

The excision of the gut was then completed, and the cut ends stitched together with silk. The peritoneal cavity was then thoroughly washed out with slightly carbolized warm water, and the external wound closed. The dressing consisted of iodoform, gauze and oakum.

Of tinct. opii. deod., gtt. xx were given. Death occurred within ten hours after the operation, from effects of the hæmorrhage.

EXPERIMENT NO. 19.

Dog was full-grown and apparently healthy. When the abdomen was exposed by shaving, two small abscesses, each the size of a filbert, superficially seated and non-inflammatory, were discovered. They were not disturbed. The animal was anæsthetized at 8:30 A. M., and at once shot through the middle of abdomen with a 44 calibre revolver. The dog was placed upon the table, and a linear incision of about three inches made in the median line. It was there found that the ball had glanced upon the abdominal muscles, and instead of going through the mass of small intestines, had been deflected so that it just entered the peritoneal cavity beneath the linea alba, traversed the cavity for about an inch, producing a contused wound of a fold of intestines, and then entered the abdominal parietes to make its exit opposite the wound of entrance, about two inches from the linea alba. Only a small amount of blood was found in cavity. Although none of the intestines were wounded, a resection of about two inches from the middle of the ileum was made. The divided ends were united by about a dozen interrupted silk sutures. The cavity was washed thoroughly with a 1 per cent. sol. of carbolic acid, the intestines returned, and stitches were being placed in external wound, when the abdominal cavity was found to be filling with blood. Source of the hæmorrhage was found to be a branch of mesen-

teric artery at the site of the resection, which had commenced to bleed as soon as circulation was restored by warmth of abdomen. A ligature was applied, the intestine returned and the cavity again thoroughly washed out. The external wound was now closed by silk sutures, the wound dusted with iodoform, and dressed by applying a few thicknesses of carb. gauze, covering this with a mass of tow and a bandage over all. Animal appeared to suffer but little from shock. On morning of second day was given ¼ grain morphia with 1-100th grain atropia by the mouth.

On the third day appeared greatly prostrated, vomited at intervals, and a muco-purulent discharge was noticed coming from nostrils and eyes. Vomiting ceased on fourth day. Prostration and evidence of fever kept up to the morning of fifth day, when improvement began. Discharge from nostrils continued about ten days. On the fourth day a small quantity of milk was taken and retained. Loose discharge from bowels on fifth day slightly colored with blood. A rectal injection of alcohol; water was given on the sixth day. Dressings changed for the first time on sixth day. Wound appeared healthy and united in its deeper portions. Some pus from superficial part of wound from this time on, the dog ate milk regularly, and had regular and normal passages from bowels. On ninth day sutures were removed from external wound, which had entirely closed. On the thirteenth day, February 10, 1884, dog is apparently perfectly well; has been eating regularly of raw beef, and has begun to gain in flesh. On the evening of thirteenth day dog was well. Recovery.

EXPERIMENT No. 20.

February 2.—(Ball cal. 32.) Died from ether before any incision was made.

EXPERIMENT No. 21.

A strong black dog, about 20 lbs., was shaved over the ab-

domen and then etherized at 9.15 A. M. Was shot with a 38-100 calibre revolver through the abdomen about opposite the umbilicus, and five inches to the right of the median line, the point of exit being in a corresponding situation on the opposite side. Upon opening the abdominal cavity such a large amount of blood was found that it was necessary to enlarge the incision by a cross cut. A large mesenteric artery was found to be cut and was ligated. Another smaller one was treated in the same way. There were two wounds in the small intestine close together, about six inches intervening between them. Extravasation of contents from both. One was perforating and the other nicking the gut on the mesenteric side. Eight inches were removed, and the free extremities of the intestine united by interrupted silk sutures. There were three other wounds nicking the intestine which were sewed in the same manner without resection. The end of the cæcum, which is peculiarly shaped in dogs, was shot off. Stained mucus and some shreds at the opening. This was sewed, turning the cut end in. The spleen was cut in one place, which was left with one deeply-planted suture. A large fold of omentum was ligatured and removed. The abdomen was thoroughly washed with carbolized water, and the external wound united with about fifteen sutures. It was then then dressed with iodoform and oakum, ½ ounce of alcohol and 15 gtt. of deodorized tincture of opium were administered per rectum, and at 12.15 the dog was allowed to come from the influence of ether. The same amount of alcohol and opium were administered as before at 6 P. M. The dog died during the night. Post-mortem revealed no evidence of inflammation, and some slight bleeding from the spleen. The sutures in the intestine were in good condition. The piece of gut, about eight inches long, supplied by the mesenteric artery, which was cut by the bullet, was found to be completely mortified.

EXPERIMENT No. 22.

February 12, 1884.—(Ball cal. 32.) Brindle bull dog. No attempt to sew up the holes in the intestines, of which there were about twenty. Died the day following. "Tilley's anæsthetizer." Every opening showed evidence of extrusion of contents.

EXPERIMENT No. 23.

February 28, 1884.—Tilley's anæsthetizer. Died before operation from effects of ether.

EXPERIMENT No. 24.

February 28, 1884.—(Ball cal. 44.) A short, strong Spitz dog. Bullet wounds of entrance and exit 4 in. apart. Intestine perforated in four places and abraded in one spot. Intestinal worms free in abdomen. Tape worms protruding from perforations.

Extravasation of contents of the bowel. No arteries divided by bullet. Resected one piece, (including three perforations) 12 in. length. Removed a V-shaped piece including the fourth perforation, and inverted the serous surfaces by interrupted sutures, the same as in complete section. The apex of the V (pointed to the attached border of the bowel) controlled the oozing from the abraded spot by small suture passed across mesenteric side of abrasion, the abrasion being the size of a copper cent, and on the side of intestine. Washed the intestines and abdomen cavity as clean as possible by stream of weak carbolized and pretty warm water from the irrigator; closed abdomen wound by five deeply-placed sutures about ⅓ inch apart; gave hypodermic injection of ¼ grain of morphia. Shock and little loss of blood. Omentum also removed.

February 29.—In morning seemed very lively and bright; gave some water, which was immediately rejected by stomach. During morning vomited foul-smelling fluid and two 'arge

chunks of meat. About 10 A. M. gave hypodermic injection of ½ grain morphia; in very few minutes he laid down and began to whine as though in pain, and threw up large quantity of offensively-smelling fluid. Died about 3 P. M.

Post-mortem.—Abdomen showed evidence of intestinal extravasation, all organs being bound together by peritoneal inflammation; extravasation of blood beneath peritoneal covering of intestines, and small clots adherent all along the length of ileum. The stumps of ligated mesentery and omentum were black. The seat of the operation showed adhesion of the serous surfaces, and water could be forced through the excised piece which was taken out by a cut six in. to each side of the stitches, without any leaking at seat of operation. The spot of abrasion was swollen and blue, and there had been a little hæmorrhage from it. The intestines generally were contracted, glued together, and pressed into prismoidal and other shapes. Stomach empty.

EXPERIMENT NO. 25.

February 28, 1884.—(Ball cal. 44.) "Tasso."

Bullet under skin opposite to point of entrance. Intestine riddled in about four places, for which a complete section 20 in. in length was removed and was nicely adjusted; another hole in the ascending colon was closed on each side by the continuous suture; the tip of the spleen being shot off, to arrest hæmorrhage a ligature was passed around proximal side of wound tight enough for that purpose, but yet not enough to cause death of the spleen tissue beyond ligature. The stumps of ligated mesentery being gathered upon a suture, were united to intestine near or about at the seat of the approximation of the divided ends; omentum removed; gave rectal injection of alcohol and water ½ ½ about. Each opening in bowel had more or less of the contents around it.

February 29.—Seemed very quiet all the morning, and was quite indisposed to move. Towards noon, gave him, about 11 o'clock, about 1 oz. of alcohol and water ½ ½ per rectum and some water to drink, which was at once vomited. Seemed very tired all day and disposed to lie stretched out before the heat of the register, and his breathing was entirely thoracic and by means of the cervical muscles. At 6 P. M. gave hypodermic injection of morph. gr. ⅜, and left water where he could drink.

March 1.—Seemed very weak all day; gave hypodermic injection of morph. ½ gr. twice, the last at night. About noon gave rectal injection of alcohol and water.

March 2.—Still alive, but very cold; listless and indifferent; gave morph. in A. M., and tied him up in blanket. Returned at nine P. M., and poor "Tasso" was in rigor mortis. I think the exposure to cold during the day (Sunday) which was a very wintry day, was in great measure the cause of his death. He refused to drink any milk during the day, and also seemed to have lost his thirst for water.

Post-mortem March 4.—Extensive peritonitis present; no separation of the united intestine to be found at the seat of operation.

EXPERIMENT No. 26.

March 3.—(44 cal. cartridge.) Large, fat and old bitch. Used Frank Gould's revolver, 44, and upon opening the abdomen, found four large rents in the intestines (every one of which showed extrusion of contents and some worms) at a considerable distance apart, and a very profuse hæmorrhage from the wound of exit, which was not discovered until the resections were made, of which two included the wounds in the gut, which was about shot off, and much bleeding took place before they were found and ligated. The animal was so fat and boggy that it was with the greatest difficulty that

hæmorrhage could be controlled, and the beast was old and presented signs of cataract in both eyes. The bladder was greatly distended, and the structure of the intestines themselves seemed "sleazy," and the sutures tore out with readiness upon slight traction. Cleansed out abdomen as best we could by thorough washing, but a little bleeding was going on when the wound was closed in the abdomen, and the operation given up as a bad job of one-half hour's duration.

March 4.—Found dead.

EXPERIMENT No. 27.

March 4.—(44 cartridge.) Medium-sized dog; died from shock on night of 4th.

EXPERIMENT No. 28.

March 6.—(Ball cal. 22, revolver.) Very small, black and tan dog. Shot him with a 22 cartridge, and had to use three shots before could get a good perforation and but little bleeding. Resected a piece around the bullet-hole of ¾ inches long, cleaned abdomen and closed tightly; gave morph. gr. ¼.

March 7.—Seemed very bright.

March 8.—Gave little milk and morphia in evening.

March 10.—Milk.

March 11.—Sent down cellar to be fed on milk.

March 12, 13.—Very hearty, and eats ravenously of milk and very little meat.

March 14, 15.—Doing nicely. Recovery.

EXPERIMENT No. 29.

March 6.—(Ball cal. 44.) Large, strong dog. Used 44 cartridge. Found the abdomen full of blood; spleen perforated, and intestines wounded in three or four places. From these issued fæces, gas, etc. Removed spleen, omentum, and resected about 12 in. gut, including all the holes but one, which was sewed up by continuous stitch. The animal having

lost nearly all his blood by this time, and as death was sure to ensue, one of the mesenteric arteries was ligated to ascertain results.

March 7.—Found dead in morning.

Post-mortem.—Intestine black, but the animal had evidently not lived long enough to get any positive mortification of ligatured part, or any interesting appearance at all.

EXPERIMENT No. 30.

March 10.—Tilley's Inhaler. Large chandler bitch. Killed by ether.

EXPERIMENT No. 31.

March 10.—Tilley's Inhaler. Large Hastman dog. Killed by ether.

EXPERIMENT No. 32.

March 10.—(Ball cal. 22, rifle.) Medium-sized bitch. Found three mesenteric arteries severed, and intestines riddled in many places and far apart. Perforations showed fæcal matter and tapeworms. Stopped bleeding and returned intestines without closing the perforations, and closed abdomen. No dressing but iodoform (C. T. P.) Spleen also removed, being perforated.

March 11.—Still alive, and sent down cellar.

March 13, A. M.—No better.

March 14, 15, A. M.—Vomiting, and refused food.

March 18.—Dead. Septic peritonitis. Pockets of fæces.

EXPERIMENT No. 33.

March 10.—Small dog (yellow). Shot with 22 cal. rifle. Three perforations of small intestine, showing fæcal matter. Removed a 4-in. piece in two places, and brought ends together very closely; stitched mesenteric stumps to attached border of intestine. Removed omentum, tying tightly, and also putting in three side stitches connecting sides of stumps on each side of ligation with one another.

March 11.—Alive, but feverish and vomiting.

March 12.— Died. Separation at seat of operation, and stumps mortified. See specimen. Fæcal extravasation.

EXPERIMENT No. 34.

March 12.—(Ball cal. 22 rifle.) Old, mangy bitch. Died under ether. Tilley's Inhaler. Perforation showed extravasation of contents, fæcal matter and worms.

EXPERIMENT No. 35.

March 12.—Medium-sized, short-haired, yellow cur (white nose). Shot with 22-ball rifle. Upon opening the abdomen, found blood flowing from a rent in the side of spleen. This organ was three times the normal size, but no holes in the intestines anywhere, and no hole could be found in the abdominal wall on either side. The bullet lay next the abdominal muscles, and was cut out from the wound of entrance. Free bleeding from the laceration in the spleen, which was controlled by a continued suture. Resected six inches of intestine and closed abdomen. Also omentum removed. Iodoform and oakum dressing; gave morphia.

March 13.—¼ gr. morphia A. M.; very weak P. M.

March 14.—Morph. A. M.; very weak P. M. Temperature 102.

March 15.—Re-opened, but found intestine in solid mass and filled with badly-smelling fluid. Washed out as best I could and reclosed. Seat of operation showed mortification on one side, and stumps mesentery also were black and soft.

March 16.—Still alive. Morphia gr. ¼.

March 19.—Dead. Found intestinal worms in abdominal cavity.

EXPERIMENT No. 36.

March 12.—Short, black, stumpy and very fat dog. Fired four 22-balls at the animal before was sure that any had entered.

Found abdomen full of blood; two perforations five inches apart, and two mesenteric arteries shot off near the gut. Each perforation showed extravasation, fæces and worms. Ligated the arteries; resected one piece, including both holes; sponged out abdominal cavity; removed omentum, also a large quantity of fat which hung to the inner wall of the belly, and closed wound. Iodoform and oakum dressing; gave morphia.

March 13.—Quite bright. Morphia A. M. and P. M.

March 14.—Dead. Post-mortem. Found considerable peritonitis and mortification of the ends of the intestines where they were stitched together. The stumps of mesentery and omentum also showed signs of mortification.

EXPERIMENT No. 37.

March 13.—Medium-sized brindle bitch. No. 22-ball rifle. Resected one piece six inches having two holes; removed omentum very little; hæmorrhage; gas and fæces from wounds; temperature 98 2-5 at close of operation.

March 14.—¼ gr. morphia A. M. Temperature 102 2-5. Morphia P. M.

March 15.—¼ gr. morphia P. M.; temperature 102 2-5.

March 16.—Morphia P. M.; temperature 102.

March 17.—Gave milk and morphia P. M.

March 19, 20.—Gave milk and morphia P. M.; seems well.

April 22.—Perfectly well; recovery.

EXPERIMENT No. 38.

March 13.—Medium-sized yellow dog (with bare spot on tail). No. 22-ball rifle; found one lateral hole which closed by continuous suture, and three holes which were included in one piece which was cut in half by mistake; two arteries gave some bleeding, but were ultimately controlled. Contents of bowel found at each wound. Abdomen closed while yet there was

some oozing from the wound, which ceased when bandages were applied; omentum removed.

March 14.—Very weak and much prostrated. Refused to lie down, and can stand with difficulty on his feet. Gave morphia ⅜ hypodermically, morning and evening.

March 15.—Found dead. Post-mortem. Mortification at seat of operation, and escape of intestinal contents.

EXPERIMENT No. 39.

March 14.—(Ball 22-cal. rifle.) Medium-sized brindle dog (wolf face); found three ragged holes. Resected one piece which included all openings, the piece being seven inches long; closed neatly, the omentum being removed also (many tapeworms and considerable fæcal matter from openings), then washed clean by irrigator. The entire ileum was inspected and sponged off, and returned to abdomen. Spleen also pulled out and inspected; gave morphia and dressings of iodoform and oakum.

March 15.—Some shock; morphia.

March 16.—Morphia P. M. only.

March 17.—Morphia P. M. only.

March 19.—A. M. morphia, stercoraceous vomiting, and seems very sick; P. M. is evidently dying.

March 20.—Vomiting has stopped, and seems much better. Died in the evening. P. M. Septic peritonitis. Post-peritoneal abscesses.

EXPERIMENT No. 40.

March 14, 4.45 P. M.—A young, black, bitch pup; anæsthetized and abdomen opened without shooting; ligated a mesenteric artery and closed wound to be re-opened to-morrow afternoon and resect the part supplied by ligated vessel; gave morphia ⅜.

March 15.—Opened her at 3 P. M. in presence of Prof. Parkes.

Intestine supplied by the ligated artery seemed softer than normal and its mesentery showed inflammatory exudate considerable effusion; closed wound, gave morphia at night.

March 16.—Gave morphia, gr. ¼.

March 17.—Sent down stairs.

March 19.—Seems quite well.

April 22.—Perfectly well. Recovery.

EXPERIMENT No. 41.

March 19.—(Ball 22-cal. rifle.) Medium-sized young bitch (black). Found one abrasion which closed up by continued suture and the intestine in another place was about shot off; fæcal matter scattered all about, worms divided; resected the piece about one inch long; irrigated the abdominal cavity; removed omentum and then found a hole or rather the tip of the spleen shot off which bled some and was controlled by two interrupted sutures; gave morphia, gr. ¼, and applied dressings.

March 18, 19.—Morphia, gr. ½.

March 20.—Seems bright, but very quiet.

April 22.—Quite well. Recovery.

EXPERIMENT No. 42.

March 19.—Twenty-two ball rifle (brindle, white bitch). Found one abraded edge and one hole through free edge of ileum, from which contents issued. Closed one by continued suture and resected across the hole by cutting out a ¾ inch piece. Did not remove omentum. Gave morphia ⅜ and applied dressing.

March 18 and 19.—Morphia. Seems to have a paralysis of left fore-leg since operation and for two days past seems to be salivated.

March 20.—Better.

April 22.—Well. Recovery.

EXPERIMENT No. 43.

March 20.—(Stub tail.) A small half-breed terrier dog. Twenty-two ball rifle. Found two perforations and one abrasion, extravasation of gas and stained mucus and shreds of matter from openings going through mucous coat. Made a resection including all three wounds, the excised piece being six inches long, closed very snugly and connected the ligated mesenteric stumps with the attached border of intestine by a single ligature passing through both stumps (but two sets of vessels having been ligated) and both sides of the mesenteric borders of the united ends of the gut; removed omentum and irrigated abdomen cavity freely with a 1 per cent. of carbolic acid solution. Dressings, oakum and iodoform; gave morphia, ¼. Recovery.

EXPERIMENT No. 44.

March 20.—A young, shaggy, cur dog opened without shooting, and ligated three sets of branches from the superficial mesentery artery, close to the main artery, and also a good-sized anastomatic connection with an adjoining vasa intestini tenuis, which ran parallel with and along the attached border of the bowel. The intestines supplied by the vessels blanched immediately. Closed abdomen; gave morphia, gr. ¼; applied dressings. Recovered.

Died subsequently from ether during examination as to result of above operation six days after it. Found intestine perforated by stick of wood four inches long, rolled in twine. Had removed it, and was about to sew up wound when ether killed him.

EXPERIMENT No. 45.

March 20.—A good-sized spaniel dog (old). Stopped breathing once from ether before shooting. Shot with a rifle twenty-two ball. Found the abdomen full of blood, two arteries hav-

ing been shot off and the ileum perforated in four places; from each contents extruded, two being so near together and the wounds so great as to almost carry away an entire segment of the bowel, necessitating a removal of about twenty inches. Much bleeding, which took about half-an-hour to control, being from the ligated stumps and bullet-wounds; the tissues were very brittle, and so loaded with fat as to make the operation difficult. Died in one half-hour after closing abdomen wound.

PATHOLOGICAL SPECIMENS SHOWN.

1st. Section of ileum made 24 hours after operation; showing the sutures all covered with exudate. Union sufficiently firm to allow distention with water without leaking.

2nd. Sections of intestines made four, six and eight weeks after operation—the animal having fully recovered. The union is firm and solid throughout entire circumference of the bowel. No narrowing of tube, or disposition to formation of a stricture. Two of the specimens show several of the sutures ulcerating into the lumen of the bowel.

3rd. Several specimens showing mortification of distal ends of stumps, and also mortification of applied edges of the bowel from tight sutures and ligatures.

4th. Several specimens showing giving way of sutured bowel ends at the mesenteric junction, allowing extravasation causing fatal inflammation—sutures failed to include the muscular coat.

5th. Specimens showing many varieties of wounds produced by the bullet.

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ORIGINAL COMMUNICATIONS.

ARTICLE I.

CHRONIC ADHESIVE PERIMETRITIS.

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[*Read before the Chicago Gynecological Society, November*, 1883.]

Definition and Nature.—*Perimetritis* is inflammation of the pelvic peritoneum. This term was first proposed by Professor Virchow in 1862. He bases this name on its analogy with pericarditis.

M. Bernutz names this inflammation "*Pelvi-Peritonite.*" Scanzoni calls it "*Pelveo-Peritonæitis.*" Courty, "*Inflammation Peri-uterine.*"

Perimetritis is rarely idiopathic; it is nearly always symptomatic. It is possible that it may arise from direct injury, but in such cases it is as justifiable to suppose that some other organ—as the bladder, ovary, uterus, bowel or fallopian tube—

was the *first* to become inflamed, and the peritoneum *afterwards* became inflamed, as to contend that the peritoneum was the first to take on inflammatory action.

In nearly all cases of perimetritis the inflammation arises from an irritation applied to the peritoneum from the condition of the pelvic organs incident to menstruation, or from causes presented by the condition of the pelvic organs in the course of their diseases or abnormal conditions, which will be presently considered. It is never seen after the menopausis.

Frequency.—In a large gynecological practice one is surprised to meet with so many cases of perimetritis. In the virgin and in the child-bearing woman we find it exceedingly frequent. The one means of examination—*conjoined manipulation*—almost at once reveals its presence. By touch we soon exclude cellulitis and extraneous pelvic growths, and obtain the tenderness and difficulty of movement of the uterus which plainly indicate adhesions. Speculum examinations also reveal, especially in virgins and women who have not borne children nor had a blenorrhagia, the peculiar vascular changes which clearly indicate impaired circulation in the uterus. Winckel states that he found perimetritic adhesions in more than 33% in all autopsies of women. Courty affirms that about one-third of uterine diseases is perimetritis. Aran found pelvic peritoneal adhesions and evidences of previous inflammatory action in 55% of women examined post-mortem. He states that "adhesions were twice as common in women who had borne children as in women who had not." Heitzmann affirms, in 1883, that fully three-fourths of Professor Bandl's clinic present evidences of past or present perimetritis.

Duncan states that "In women not recently confined, dis-

eases of the genital organs and accidents, surgical or other, lead to adhesive perimetritis more frequently than to pelvic inflammation of any other seat or nature."

The remarkable frequency of this condition certainly demands careful study. It is a matter of great surprise to me that so little is written upon this topic.

Anatomical Considerations.—It is of the utmost importance that our knowledge of the peritoneal relations be exact. Let us review them briefly:

The pelvic portion of the peritoneum presents the appearance, when viewed from above, of having been pushed up from beneath, from the bottom of the pelvis, by the uterus, its appendages and the bladder. Upon sawing perpendicularly through the frozen female pelvis from the symphsis pubis to the middle of the sacrum, and removing the abdominal viscera in order to dissect with ease, it will be found everywhere that the pelvic organs push up the peritoneum, the latter is protected from absolute contact with them by a film of connective tissue, thin in all places and very thin in a few of them. This connective tissue is called a "muscular platysma" by Savage, and furnishes, he says, for the most part, the surgical interest of the pelvic peritoneum. Its peculiar structure can be studied in the reduplications of the peritoneum.

The impression cannot be escaped when one considers the ubiquity of the peritoneum in the upper part of the pelvis, folded around every one of its organs to a greater or less extent, and projected between them in the shape of folds and ligaments, that Nature intended to crowd as much of this organ into the pelvic cavity as could be well accommodated there.

The Broad Ligaments.—These ligaments are composed of the two layers of peritoneum passing from the anterior and

posterior surfaces of the uterus outwards and backwards to seek attachment to the pelvic wall just anterior to the sacro-iliac synchondrosis, the layers separating at the points of their attachment and at their bases. Containing between their laminæ the fallopian tubes, ovaries, blood-vessels, lymphatics, connective tissue and unstriped muscular fiber, they present the beginnings of many attacks of pelvic peritonitis—consequently their anatomy and relations cannot be too thoroughly known.

Their position varies according to the location of the uterus. Normally they lie obliquely, their posterior surfaces looking upwards and backwards, and their anterior surfaces looking downwards and forwards. In pregnancy they are drawn up and lie almost vertically. In backward displacements of the fundus they are twisted longitudinally coincidentally with the degree of the displacement. It will be found in many patients that the greater the retroversion or the retroflexion the stronger are the objective symptoms of chronic perimetritis, doubtless facilitated in its access primarily by the uterine displacement.

The broad ligaments and the uterus divide the pelvic peritoneal cavity into two unequal divisions. The anterior cavity contains the bladder only, and is much the smaller of the two. The posterior lamina of the broad ligaments extends farther downwards than the anterior, especially in the middle, covering the upper and posterior part of the vagina. The anterior lamina dips down only to the level of the internal os uteri, and is then reflected on to the bladder.

Viewed from above, the broad ligaments present the appearance of having three minor folds embracing from before backwards the round ligament, fallopian tube and ovary respectively. These folds occupy the posterior fossa of the peritoneal

cavity. Inflammation of the pelvic peritoneum commences more often in the posterior than in the anterior fossa, and anatomical relations explain the reason therefor. When the fundus uteri is turned backwards its malposition constitutes one of the etiological factors of perimetritis. Fluid escaping from the fallopian tubes, whether it be purulent, gonorrhœal, sanguineous or medicated, will be deposited in the posterior pelvic peritoneal fassa and produce perimetritis.

The Utero-Sacral Ligaments, or Folds of Douglas.—These ligaments are crescentic layers of peritoneum reflected from the broad ligaments above them, and muscular platysma containing muscular fibres from the vagina and uterine cortex (Savage), which pass from the lower, lateral part of the uterus, opposite the os internum, at about the insertion of the vagina, outwards and backwards for insertion to the inside of the sacro-iliac symphysis at the third sacral vertebra, and, often, above as high as the promontory, or the anterior and lateral part of the last lumbar vertebra. (Huguier). They form the upper and lateral boundaries of the fossa of Douglas, which communicates with the peritoneal cavity through a lumen between these ligaments. In this lumen lies the empty large intestine. In the normal state they act as one of the factors of the support of the uterus *in situ naturale*, contributing to prevent downward and forward displacements of the cervix.

The Fossa of Douglas.—This fossa is a pouch of pelvic peritoneum lying between the uterus and vagina anteriorly, and the rectum and sacrum posteriorly. It is, anatomically, the lowest projection of the peritoneum. This cavity is of the gravest importance practically. It can easily be explored through the vagina and rectum. The utero-sacral ligaments bound it above, and, below it, usually extends to the vaginal

fornix. Exceptionally it extends to the floor of the perineum. (Pirogoff).

Unrestricted by adhesions, this cavity may attain dimensions equal to the cavity of the pelvis, exclusive of the thickness of the rectum, vagina and bladder. Into this cavity various organs—as the small intestine, the fundus uteri, or the ovary, or even an extra-uterine fœtation—may protrude. Serous, sanguineous or purulent fluids are frequently found in it. And lastly, the fibrinous adhesions of perimetritis are often found in this cavity. Its dependency makes it especially liable to take on inflammatory action from the invasion of exciting causes from above.

Its distensibility and capacity for dislocation are astonishing. It has repeatedly been found protruding from the vulva, pushing the posterior vaginal wall before it, and, in other cases, from the anus, pushing the anterior wall of the rectum before it. In one patient I saw the fundus uteri retroverted and retroflexed till it rested on the perineum, and it could be readily grasped by the thumb and finger introduced respectively into the vagina and rectum.

The lowest part of the fossa lies distinctly to the left of the uterus. It is stated that the fossa is of equal depth on both sides, chiefly in old women and in presumed pathological processes. (Barnes). Very often this space can be found empty, and the examining finger can be thrust into it, inverting the peritoneum and feeling the utero-sacral ligaments right and left, presenting various degrees of thickness, tautness and tenderness. In such an examination, best conducted in the anæsthetic state, the finger displaces whatever is in front of it, whether it be the uterus, an ovary, a fold of small intestine, or an extra-uterine fœtation.

The careful differential examination of this space yields,

very often, the most valuable information to the gynecologist. When replete it is always swelled and sometimes descended. When occupied by a solid organ its outline through the walls of the fossa are easily and sharply defined. When filled with hardened lymph, as in the case of *colica scortorum*, its outline is hard, smooth and uniform, and the space is descended partially. When filled with fluid, of which there is a large accumulation above—as blood, serum, or pus—its greatest descent and distention are observed. Often in such cases it fills the whole vagina—nay, even, at times, the whole pelvic basin, so that finding the cervix is difficult, and in some instances impossible. Cutting into the Douglas fossa, when in its natural relations, without doing more than is intended, is only too often impossible; whereas, cutting into it when largely distended is a very easy matter. Indeed, thrusting the finger into it upon making a digital examination occurred once to my friend Prof. Parkes, and it was immediately followed by an enormous discharge of pus. A case of hydatids of this fossa is described, wherein an abscess formed and protruded beyond the vulva, forming a tumor larger than an adult fœtal head. (Duncan). Freund reported a case of great procidentia, where the fossa of Douglas descended unchanged, carrying with it the rectum to the lowest part of the prolapsed mass.

PATHOLOGY.—Three or four forms of inflammatory changes in the pelvic peritoneum are described by authors:

1st. *The Adhesive* form, the commonest of all forms of inflammation of the pelvic organs;

2d. *The Suppurative* form, the most important because of its frequently fatal termination; and

3d. *The Serous* form, the rarest of all forms of pelvic peritoneal inflammation.

To the foregoing subdivision, some writers add:

4th. *The Sero-Adhesive* or *Sero-Encysted* form, a combination of the first and third forms.

I desire to call attention to the chronic stage of the adhesive form of perimetritis. We see perimetritis very often in its chronic stage, and but rarely in its acute stage.

When we reflect that all inflammation is *active*, it would almost seem that *chronic* inflammation is paradoxical. One writer goes so far as to declare that there is, strictly speaking, no such process as *chronic inflammation;* while, upon the other hand, some inflammations are said to be "*chronic*" from their inception. (Courty.) However, I wish to include in this article those cases which have passed beyond the first or acute stage, as so understood, attended by constitutional disturbance of a pyrexial character.

The etiology of perimetritis will be better understood if we bear in mind that serous membranes are simply modifications of the unformed connective tissue of the body which may be regarded as a "continuous whole in which the nervous and muscular fibres, bone and cartilage, epithelial tissues, etc., are embedded. * * * * The connective tissue of the serous membranes is uninterruptedly continuous with the interstitial connective tissue of those organs which they invest. The inference from this is plain: that the serous membranes may and do, in fact, take part in all the morbid changes to which the interstitial connective tissue of those organs is liable." Bearing this fact in mind will enable us to understand how an inflammation of any of the pelvic organs may eventuate in a pelvic peritonitis. (Rindfleisch.)

The course of the inflammatory process is determined in accordance with the respective intensity and quality of the great variety of irritants producing it. The process observed

in the acute stage is a reddening of the peritoneal surface, which is the capillary engorgement preceding the migration of the colorless blood corpuscles, fibrin and serum. From this point the further histological metamorphosis tends to one of three directions, viz.:

1st. Towards *Resolution—i. e.*, to the absorption of the exudation and a return of the peritoneum to the condition in which it was before the inflammation set in;

2d. Towards *Organization*, wherein the well-known "bands of adhesion" are found; and,

3d. Towards *Suppuration.*

Cases terminating in resolution may be said not to pass into the chronic stage at all, because the steps towards the pathological acme and back again to health are so rapid that none of the appearances of slowness of changes so commonly associated with the chronic form of inflammation are herein seen. It may be well to remark that very many cases of this form of perimetritis occur after miscarriages and labor at full term, when the patients are confined to the bed and are thus subjected to the best of all therapeutic measures for this malady, viz., *rest.* Cases terminating in speedy resolution without doubt have causes that are comparatively mild in their force.

Cases terminating in organization are usually insufficiently considered by writers. After the *fibrinous* exudation has ceased its active movement it becomes physiologically equivalent to embryonic tissue, developing (1) the round into the spindle-shaped cells, whose processes touch each other and then become fused together, and, later, (2) the process of vascularization. The *serous* exudation either remains free in the pelvic cavity, or becomes encysted by the formation of false membranes, or is absorbed. After the fibrinous exudation has become organized the pelvic organs will become

anchylosed to a degree *pari passu* with the amount of the exudate. By digital examination the part of the pelvis above the vagina will be found as "hard as a deal board," the normally movable organs above being matted together and quite indistinguishable by conjoined palpation. This stage constitutes a point of departure for very many cases wherein the organized material slowly disappears by absorption, stopping at almost any point from the slowest possible advance up to its complete disappearance. The rarest of all forms of perimetritis, viz., the serous form, is developed right here where the plastic exudate has nearly disappeared, and the encysted collections of serum remain, above, unaffected. Where neither exudate nor serum is wholly absorbed we have the *sero-adhesive* form of perimetritis which some authors have seen fit to mention especially. Two explanations for the increase of the serous fluid exist: One is, the increased peritoneal exhalation from retarded venous circulation from cardiac, hepatic or renal disease; and the other is, diminished absorptive capacity of the peritoneum. When a portion of peritoneum becomes inflamed its absorbing power is decreased, and where sealed spaces formed by inflammatory agglutinations of the pseudo-ligaments of perimetritis are found, serous accumulations will form of varying size. In this way serous cysts arise around the uterus. They are very commonly found in the fossa of Douglas. They vary infinitely in size, from that of a mustard seed up to that of a fœtal head. Now and then they attain to a large size, and they have been diagnosticated and operated on as ovarian cysts. M. Huguier, in 1847, suggested that the spontaneous cures of alleged ovarian cysts, after tapping, were really cures of cysts about the uterus and not cysts of the ovary.

Many cysts of the broad ligament have their origin in adhe-

sive perimetritis. It is well known that they are usually not large, and are monolocular. When we consider the fact that sealed spaces in chronic perimetritis are at first small and may include in their extent a small surface of peritoneum capable of exuding the fluid of these cysts, we readily understand why they are monolocular and why the increase in the amount of fluid will cause an increase in the capacity of the cyst walls till pressure from within or extraneous influences cause a cessation of serous exudation into the cyst, and thus allow it to remain the same in size indefinitely. I have in my possession, from one of my oöphorectomy cases, a broad ligament cyst of this kind. The cyst walls are composed of exudation covering the broad ligament anteriorly, and they had a capacity of about two ounces.

Another fact of pathological interest is the co-existence of serous and suppurative perimetritis in the same patient. A sealed chamber of serum may exist in the same pelvis wherein a suppurative accumulation exists. I have no means of knowing whether they usually develop in the course of the same inflammatory attack or from separate attacks. It can be readily seen that it is possible for them to develop together or separately. Last month, for Dr. Dodge, of this city, I opened an abscess, as I supposed it to be, by cutting into the bulging fossa of Douglas. The patient had been ill in bed for six weeks with the usual clinical history of perimetritic abscess. I was astonished to see a great flow of serous fluid—about twenty ounces, I should say. We left the patient, protesting our chagrin after such an apparently clear clinical case of suppurative inflammation. The next morning we were still more astonished to learn that during the night the abscess itself had broken spontaneously into the rectum and discharged very freely. In this patient suppurative and serous perime-

tritis co-existed. She had been complaining several months previously, and it is highly possible that the serous accumulation was of a more ancient origin than was the purulent accumulation. The sudden supervention of the pains, rigors and fever six weeks prior to operating, clearly indicated the history of the suppurative development.

The *location* of the exudation at once reveals the fixation of the pelvic organs. In severe cases the uterus, tubes, ovaries, bladder and rectum are seen to be held in an unyielding grip. The fossa of Douglas is more or less bulging. Any previously existing version or flexion of the uterus is found to be more pronounced. The pressure on the pelvic nervous supply often forms a conspicuous feature of the disorder. The same pressure also changes the physiological functions of menstruation and conception in the majority of cases. Often the exudations are found above the pelvic inlet and in the iliac fossæ.

The *amount* of the exudation, as shown by the extent of the adhesion, is exceedingly variable. The fixation of the pelvic organs ranges all the way from the slightest stiffness of movement of them by conjoined manipulation up to their complete immobility. The adhesions are found most commonly about the tubes and ovaries when very small in extent. They are seen of all kinds of density, but frequently as "bands of length and thickness such as only imperfectly to impede motion—evidence in themselves of a gradually progressing change from close adhesion to complete loosening." (Duncan). Such small adhesions about the tubes and ovaries are doubtless the last remnants of previous perimetritis.

The length of time of the presence of the adhesions varies almost indefinitely. Very many patients present cases of pelvic peritonitis, with *partial* anchylosis of the pelvic organs, after a menstruation, which almost completely disappear before

the next menstruation. Again, we will find cases of *complete* anchylosis of the pelvic organs, resulting, *e. g.*, from miscarriages, which will completely disappear in from four to eight or twelve weeks. Then, again, we meet with cases wherein there is *permanent* anchylosis, *i. e.*, where it persists for years.

Generally speaking, the ultimate tendency of pelvic inflammatory exudate is towards its spontaneous absorption. Many cases are "cured" by a pregnancy, wherein they are stretched into bands so fine that their nutrition is practically cut off, and they remain after parturition as shrivelled up, elongated attenuations of tissue, devoid of any power to fix the uterus. Herein we have the explanation of the improvement in general health so often met with in women who are "much healthier" after a confinement than they were before it.

If we accept the usual movements of the pelvic organs incident to the movements of the body, of respiration, of coughing and of sneezing, as the primary cause of irritation leading to absorption of the exudate, we can understand easily how that portion of the adhesions about the ovaries and tubes should persist after all the others had disappeared, because of the diminished motion of those organs.

The variation of dislocation of the tubes and ovaries cannot be even approximately described. Sometimes the ovary is distorted and fastened by a few membranes; then, again, it is so imbedded in a mass of bands and membranes that it is found only with the greatest difficulty. "Thus the left ovary may lie in a curvature of the sigmoid flexure and the right may be adherent to the vermiform process in a mass of exudation." Sometimes the uterus becomes imbedded in false membranes and undergoes premature atrophy. The ovary may undergo the same process. The fallopian tubes may become compressed and even detached from the uterus. Their ends are

often stenosed or sealed hermetically, and their lining membrane may go on pouring out purulent or serous fluid according to their condition previous to the occlusion, and thus the tubes become enlarged to an enormous extent, presenting so-called cases of pyo and hydro-salpinx. Where the contained fluid is blood—the fluid most rarely found in fallopian occlusions—the case is called haemato-salpinx. Peaslee describes a case of fallopian distension wherein eighteen pounds of fluid were contained. Adhesions between contiguous coils of intestine may lead to attacks of constipation of a most rebellious character, alternating with diarrhœa and colic. Active cell proliferation in the connective tissue of the outer muscular uterine fibres leads to the development of an inelastic capsule over the uterine parenchyma, which becomes a prolific cause of abortions where pelvic peritonitis has previously existed. A similar condition existing around the ovary prevents the bursting of a ripened follicle, and gives the first impulse to the development of an ovarian cyst in some cases, and leads to barrenness in all cases thus elaborated. A large proportion of displacements of the uterus is doubtless due to perimetritic exudations and adhesions, which, when unrelieved, lead to abortions and sterility. Occasionally the plastic exudate becomes vascularized and hyperæmieted to the point of causing hemorrhages by a repetition of inflammatory attacks, and we have then a new danger to deal with, viz.: *hematoceles.* This condition has been denominated *hæmorrhagiparous pachy-peritonitis.*

ETIOLOGY.—In considering the causes of perimetritis we must never lose sight of the fact that it is rarely, if ever, idiopathic. I have never seen a case that was not secondary to some previously induced pathological condition. By far the largest number of cases arise from uterine, tubal and ovarian disorders.

The following causes of pelvic peritonitis may now be considered in detail:

I. Menstrual disturbances.
II. Pregnancy terminating in abortion or full-term delivery.
III. Gonorrhœa.
IV. Traumatism.
V. Pressure.
VI. Parametritis.

I. The influence of cold upon the menstruating woman must be regarded as one of the most prolific causes of perimetritis. Every month the uterus and its adnexa are congested to a superlative degree, and it becomes an extremely easy matter, pathologically, to convert this normal into an inflammatory condition. The inflammation, once started, is limited in its ulterior progress only by conditions not now fully understood. As elsewhere stated in this paper, perimetritis may cause almost no inconvenience at the time of its progress, or it may result in a permanent invalidism, or even death. Between these two extremes we will find every grade of severity of pathological developments and symptomatology.

The etiology of adhesive perimetritis will undoubtedly, in the largest number of cases, be found in the partial or complete suppression of the menses from cold. The latter may be applied in a variety of ways, either by exposure, by getting wet in storms, by sitting on cold stone steps, immersing the hands in cold water, washing the genitalia in cold water, getting the feet cold, sleeping in damp sheets, eating cold ices, etc., etc. Occasionally it will be found that cold, between menstrual epochs, will produce perimetritis.

Any sudden diminution or suppression of the menses is very liable to produce perimetritis. Gradual diminution of the flow leading up to its disappearance is liable to result in

this inflammation, Within the past year I saw a patient decreasingly menstruate for three consecutive months, and on the fourth she failed to flow at all, but developed a perimetritis instead. Incomplete menstruation from no apparent cause may be the cause. Occasionally, without known cause, the flow will cease and perimetritis will follow—a condition which Tarnier has denominated "a puerperal fever occurring in the course of menstruation." Severe mental emotion will also cause a suppression of the menses, which may eventuate in perimetritic inflammation. Local treatment during menstruation may also produce this malady. The same may be said of excessive sexual intercourse during menstruation.

II. Bernutz presented ninety-nine cases of perimetritis, with their causes, and he attributed forty-eight cases—by far the largest number under any one etiological factor—to the puerperal condition. Puerperal perimetritis includes all cases arising in the puerperal condition, whether the pregnancy has terminated in full term or premature delivery. Whether the causation result from sepsis, or from an extension of the inflammatory condition from the uterus, it is not always easy to decide—in fact, it would be extremely hard to decide, in the majority of cases. Too early rising from confinements must be regarded as a common cause of perimetritis. Any indiscretions of the puerperal patient which would produce peritoneal inflammation would be comparatively harmless at any other time; hence the conclusion must be reached that puerperality is an important etiological factor in this disease. When the very large number of cases of perimetritis that exist is taken into consideration, I think that the parous condition will be placed second to menstrual condition as an etiological factor.

III. Gonorrhœal inflammation, extending along the endo-

metrium into and through the fallopian tubes to the serous membrane, is communicated to that organ with unerring certainty. Nearly, if not quite, all women who have a blenorrhagia, sooner or later develop perimetritis. In this manner develop cases of *colica scortorum.* Bernutz denominates this condition—gonorrœhal perimetritis—"a veritable feminine orchitis." However, the resemblance of epididymitis to pelvic peritonitis was first enunciated by Rochoux in 1833.

IV. Violence, in its multiform applications, can produce this inflammation. Sounding, curetting, tents, stem pessaries, cutting operations in the uterus, the application of the solid nitrate of silver to the interior of the cervix, injections of fluid into the endometrium, venereal excesses and chancrous ulcerations on the cervix have produced pelvic peritonitis. Thomas includes, also, "blows, falls, injury during labor, and punctures" as kinds of violence producing this malady.

V. Pressure arising from an enlarged uterus, flexions and versions of the uterus, an enlarged or displaced ovary, chronic constipation, pessaries, an ovarian cyst, myomas, carcinomas and hematoceles may give rise to pelvic peritonitis.

VI. Parametritis is in most cases accompanied by perimetritis of various degrees of intensity. The former may, and undoubtedly often does, develop or run its course without the latter, in mild cases. Chronic parametritis of comparatively long standing, without an accompanying perimetritis, may become a cause of a renewal of an acute cellulitis, which in course will produce a severe perimetritis, eventuating even in suppuration. Within the past two months I have attended three such cases.

COURSE AND SYMPTOMS.—For convenience of description of the course and symptoms of pelvic peritonitis, we may divide cases into two classes, viz.: (1) *Mild cases* and (2) *Severe cases.*

1. *Mild* cases may run their course, unobserved at the time,

at least, by the physician. They comprise by far the largest proportion of all cases of adhesive perimetritis. I think it is safe to assert that the vast majority of mild cases arise in the course of menstruations where *cold* is the etiological factor. The menstrual discharge is diminished, and is accompanied by pain in the hypogastric region in varying degrees of intensity. This pain is such a common symptom that, usually, domestic remedies only are used, such as rest, hot applications externally, and stimulating drinks. The pains soon cease, the menstrual period passes by in due time, and the patient resumes her usual habits. In the mildest cases all symptoms cease at this time, and, at most, are experienced at one or two subsequent menstrual epochs, or they do not recur again till a fresh cause is applied. In the severer of the mild cases the patient continues to suffer at each subsequent menstruation. In a small proportion of these severe cases the patients have the dysmenorrhœal sufferings every second month, the alternate months no suffering being experienced. If it be true that each ovary is active only at every second menstrual period, it is possible that the explanation of the pain supervening at alternate menstruations only lies in the fact that one ovary is involved in perimetritic adhesions, while the other is free from them.

Very commonly after the commencement of adhesive perimetritis the patient can recall at some one menstruation, she was dysmenorrhœic for an indefinite period only—*i.e.*, pain at menstruations is the only trouble complained of. Sooner or later—it may be one month and it may be one year or longer—she evinces symptoms of inflammatory changes in the uterus, or of uterine dislocation. These symptoms intensify till her general health suffers, and then it is that she seeks medical advice. This period varies anywhere from one month to years after the initial departure from health. In

these cases it is most interesting to trace the steps of the malady from its inception to date. Only too frequently the defective memory of the patient prevents the tracing the anamnesis. Very many times the patient voluntarily states the time when the suppressed, painful menstruation occurred, and adds, "And since that time I have never been as well." Without painstaking in tracing out the history of these cases, gynecologists are only too often led to say that this malady will run its course unobserved. In many of the cases of perimetritis the only evidence of it ever adduced is found in the adhesions found post mortem.

2. *Severe cases.*—In this class of cases the symptoms are more pronounced. The pain is severe, the febrile movement decided, and the constitutional symptoms marked. A chill may or may not precede the other symptoms.

The physician who tries to make the initial symptoms tally with the ensemble of symptoms of general peritonitis will signally fail. The constitutional depression associated with the latter grave malady will be conspicuously absent.

The symptoms most commonly present in the acute stage are:

(*a*). Pain.
(*b*). Tenderness.
(*c*). Febrile movement.

Additionally, there are often:

(*d*). Nausea, vomiting and tympanites.
(*e*). Bladder and rectal irritability, and bearing down.
(*f*). Anxious facies and delirium.

I desire to speak especially of pain, only by way of amplification. It is found present in all possible degrees of difference. Many patients experience it but seldom, at long intervals, while

others may be said never to be free from it, and between these two extremes are found all shades of its variations.

The most complaint of pain is made at the menstrual periods —in other words, dysmenorrhœa is a very common feature of perimetritis. *Per contra*, one will be surprised, whose attention has not especially been directed to this subject, to learn how many cases of dysmenorrhœa have chronic perimetritis for their cause.

Pains denominated "*neuralgic*" in character are an extremely common feature of this malady. They are very commonly called "enteralgia" and "ovaralgia," the supposed pathology being in the bowel and in the ovary. They are induced or exaggerated by various causes, notably by cold, fatigue and mental emotion. Patients harassed by such pains go from one doctor to another, unrelieved, till a fresh attack of inflammation, resulting possibly in abscess or in permanent invalidism follows. Times without number, almost, have I been told by patients that, when they are *chilled*, they will have pains in one or both groins, or in the entire hypogastric region, extending in many instances down the thighs, or around to the back, or up to the hypochondria, or, as one patient expressed it, "from her ribs to her knees." Again they will complain that, when fatigued, sharp, shooting pains pass through the lower abdomen, till rest or stimulation can restore their nervous balance. Occasionally mental depression will be followed by these pains. One patient informed me that moving suddenly, "any jarring, as jumping or being pulled around by another person," always produced a series of pelvic pains which were relieved only by opium or alcohol. Many patients are compelled to abandon singing, by the "abdominal method," because of the suffering induced thereby.

COURSE AND SYMPTOMS.—Later, some or many of the following symptoms will be noticed:

(*a.*) Sensitiveness, which continues for a long time and easily returns.

(*b.*) Abdominal pressure, from exertion or otherwise, causes pain.

(*c.*) Moving the uterus, often excessively tender.

(*d.*) Displacement of ovaries and tubes.

(*e.*) Sterility.

(*f.*) Menorrhagia.

(*g.*) Amenorrhœa.

(*h.*) A tumor, or a matting together of all the organs above the vaginal vault. Often arterial pulsations at its base are found. (Nonat.)

(*i.*) Uterine cervix movable, while the fundus is immovably fixed, "as though nailed to the sacrum." (Duncan.)

(*j.*) Douglas's fossa filled with adhesions often containing the fundus uteri, an ovary, or a coil of small intestine.

(*k.*) Irritability or neuralgia of the uterus.

(*l.*) Reflex paralysis.

(*m.*) An obstinate sciatica.

(*n.*) Extrauterine or tubal pregnancy.

(*o.*) Recurrent attacks of perimetritis.

(*p.*) Hematoceles from hemorrhagiparous peritonitis.

(*q.*) Hysteria; insanity.

(*r.*) Alternate constipation and diarrhœa.

Diagnosis.—Absolute correctness of diagnosis in all cases is impossible of attainment. Furthermore, the advantage to be gained from exactly diagnosticating the location of periuterine inflammations is often of no special value in treatment.

(*To be continued.*)

ARTICLE II.

A SYNOPSIS OF THE MEDICAL BOTANY OF ILLINOIS. *By* I. M. C. CARTER, M. A., M. D., PH. B.

(*Continued from August Number.*)

Order Cistaceæ (Rock-rose Family). 2 genera, 2 species:

Genus Helianthemum (Rock-rose). H. Canadense (Frostweed). Medical properties: Aromatic, alterative, tonic, astringent, slightly bitter.

Genus Lechea (Pinweeds). L. major (Pinweed). Medical properties: Tonic, antipyretic, antiperiodic.

Order Drosceraceæ (Sundew Family). 1 genus, 2 species:

Genus Drosera (Sundew). D. longifolia (Long-leaved Sundew); D. rotundifolia (Round-leaved Sundew). Medical properties: Acrid, detergent, rubefacient, pectoral, aphrodisiac.

Order Hypericaceæ (St. John's-wort Family). 2 genera, 4 species:

Genus Hypericum (St. John's-wort). *H. perforatum*, or H. officinale (Common St. J.); H. mutilum (Low Century); H. sarothra (Nitweed, Pinweed, Orange-grass). Medical properties: Bitter, aromatic, astringent, tonic, resolvent, nervine.

Genus Elodes (Marsh St. John's-wort). E. Virginica. Medical properties: Same as preceding genus.

Order Caryophyllaceæ (Pink Family). 7 genera, 8 species:

Genus Lychins (Lychins Cockle). *L. githago* (Corn Cockle). Medical properties: Seed—acrid, depurative, purgative; root—astringent, vulnerary.

Genus Silene (Catchfly Campion). *S. inflata* (Bladder Campion); S. Virginica (Fire Pink Catchfly). Medical properties: Nervine, vermifuge (like Spigelia).

Genus Saponaria (Soapwort). *S. officinalis* (Bouncing Bet,

Soapwort, Benisewort). Medical properties: Tonic, diaphoretic, alterative, antisyphilitic.

Genus Vaccaria (Cow-herb). *V. vulgaris* (Field Soapwort). Medical properties: Seed—diuretic; plant—galactagogue.

Genus Cerastium (Mouse-ear, Chickweed). *C. vulgatum*. Medical properties: Refrigerant, nutrient.

Genus Stellaria (Startwort, Chickweed). *S. media* (Common Chickweed). Medical properties: Alterative, mucilaginous, demulcent, refrigerent, discutient, detergent.

Genus Mollugo (Indian Chickweed). M. verticillata (Carpet weed). Medical properties: Refrigerant, diuretic.

Order Portulacaceæ (Purslane Family). 1 genus, 1 species:

Genus Portulaca (Purslane). *P. oleracea* (Common Purslane). Medical properties: Antiseptic, diuretic, aperient, vulnerary. Also called Pursley.

Order Malvaceæ (Mallow Family). 4 genera, 7 species:

Genus Malva (Mallow). *M. rotundifolia* (Round-leaved M.); *M. sylvestris vel M. vulgaris* (High M.). Medical properties: Mucilaginous, diuretic, emollient, pectoral.

Genus Sida. *S. spinosa*. Medical properties: Diuretic, demulcent.

Genus Abutilon (Indian Mallow). *A. avicennæ* (Velvet Leaf). Medical properties: Demulcent, mucilaginous, diuretic.

Genus Hibiscus (Rose Mallow). H. moscheutos (Musk Seed, Swamp Rose M.); *H. trionum* (Bladder Keturia); *H. esculentus*. (Gumbo, Okra). Medical properties: Mucilaginous, demulcent.

Order Tiliaceæ (Linden Family). 1 genus, 1 species:

Genus Tilia (Linden Rosewood). T. Americana (Basswood). Medical properties: Bark—emollient, demulcent, mucilaginous; flowers—cephalic, stimulant, sedative. Also called Linn, Linden, and Lime-tree.

Order Linaceæ (Flax Family). 1 genus, 2 species:

Genus Linum (Flax). *L. usitatissimum* (Common Flax). L. Virginanum (Wild Flax). Medical properties: Demulcent, mucilaginous, emollient.

Order Geraniaceæ (Geranium Family). 2 genera, 4 species:

Genus Oxalis (Wood Sorel). O. stricta (Yellow Wood S.); O. Violacea (Violet Wood S.). Medical properties: Acid, refrigerant, diuretic, antiscorbutic, irritant.

Genus Geranium (Cranesbill). G. maculatum (Wild Cranesbill, Spotted C.); G. Carolinianum (Carolina Geranium). Medical properties: Astringent, styptic, antiseptic, bitter, tonic, febrifuge, nephritic.

Order Rutaceæ (Rue Family). 2 genera, 1 species:

Genus Xanthoxylum (Prickly Ash). Z. Americanum (Northern Prickly Ash). Medical properties: Stimulant, sialagogue, alterative, tonic.

Genus Ptelea (Hop tree, Shrubby Trefoil). P. trifoliata (Wafer Ash, Hop tree, Swamp Dogwood). Medical properties: Same as preceding.

Order Anacardiaceæ (Cashew Family). 2 genera, 9 species:

Genus Rhus (Sumach). *R. cotinus* (Smoke tree, Venetian Sumach); R. toxicodendron (Poison Ivy, Poison Oak): R. radicans; R. venenata (Poison Sumach, Poison Dogwood); R. typhina (Staghorn S.); R. glabra (Smooth S.); R. copallina (Dwarf S.); R. aromatica (Fragrant S.). Medical properties: Tonic, astringent, antiseptic; sometimes rubefacient, vesicant.

Genus Ailanthus. *A. glandulosus* (Chinese Sumach, Tree of Heaven). Medical properties: Nervine, sedative; bark—vermifuge.

Order Vitaceæ (Vine Family). 2 genera, 4 species:

Genus Vitis (Grape). V. æstivalis (Summer Grape); V. cordifolia (Winter, or Frost Grape); V. vulpina (Muscadine, South-

ern Fox Grape). Medical properties: Acid, refrigerant, antiscorbutic, nutrient.

Genus Ampelopsis (Virginia Creeper). A. quinquefolia (American Ivy). Medical properties: Alterative, astringent, tonic, expectorant.

Order Rhamnaceæ (Buckthorn Family). 2 genera, 3 species:

Genus Ceanothus (Red Root, New Jersey Tea). C. Americanus (New Jersey Tea); C. ovalis. Medical properties: Astringent, expectorant, sedative, antisyphilitic, stimulant. Similar in its effects to lobelia.

Genus Frangula (Buckthorn, Alder). F. Caroliniana (Alder, Buckthorn). Medical properties: Astringent, cathartic, anthelmintic. This species is sometimes called Rhamnus frangula.

Order Celastraceæ (Staff Tree Family). 2 genera, 3 species:

Genus Celastus (Shrubby Bitter-sweet, Staff Tree). C. scandens (Wax-work, Climbing Bitter-sweet). Medical properties: Bark of root—alterative, diuretic, hepatic, narcotic, stimulant, antisyphilitic.

Genus Euonymous (Spindle Tree). E. atropurpureus (Wahoo, Burning Bush); E. Americanus (Strawberry Bush). Medical properties: Tonic, alterative, diuretic, laxative, expectorant, antiperiodic; seed—cathartic.

Order Sapindaceæ (Soap-berry Family). 3 genera, 6 species:

Genus Æsculus (Horse Chestnut, Buckeye). Æ. glabra (Fœtid, or Ohio Buckeye). Medical properties: Tonic, febrifuge, narcotic.

Genus Acer (Maple). . *A. pseudo-palatus* (Sycamore Maple); A. saccharinum (Rock or Sugar Maple); A. nigrum (Black M. or Sugar Tree); A. rubrum (Red or Swamp M.). Medical properties: Astringent, bitter, tonic, antiperiodic.

Genus Negundo (Ash-leaved Maple, Box Elder). N. acerοides. Medical properties: Similar to preceding genus.

Order Polygalaceæ (Polygala Family). 1 genus, 5 species:

Genus Polygala (Milkwort). P. incarnata; P. sanguinea; P. senega (Seneca Snakeroot); P. polygama (Bitter Polygala); P. paucifolia (Fringed Polygala). Medical properties: Bitter, stimulant, sialagogue, expectorant, diuretic, tonic, diaphoretic, emmenagogue.

Order Leguminosæ (Pulse Family). 14 genera, 21 species:

Genus Lupinus (Lupine). L. perennis (Wild Lupine). Medical properties: Bitter, anthelmintic, emollient (used as cataplasm).

Genus Melilotus (Melilot, Sweet Clover) *M. alba or M. officinalis* (White Melilot, Bokhara or Tree Clover). Medical properties: Aromatic, pectoral, expectorant, diuretic, emollient, discutient.

Genus Trifolium (Clover, Trefoil). T. arvense (Rabbit-foot, Stone Clover), *T. pratense* (Red Clover); T. repens (White Clover). Medical properties: Pectoral, antidysenteric, detergent, depurent, alterative, laxative. Red clover is somewhat noted as a *cancer remedy*.

Genus Amorpha (False Indigo). A. fructicosa; A. canescens (Lead Plant). Medical properties: Alterative.

Genus Psoralea. P. melilotoides. Medical properties: Stimulant, tonic.

Genus Stylosanthes (Pencil Flower). S. elatior. Medical properties: Uterine sedative in gestation, tonic in parturition.

Genus Lespedeza (Bush Clover). L. violacea, var. sessiliflora. Alterative, diuretic.

Genus Tephrosia (Hoary Pea). T. Virginiana (Goat's Rice, Catgut). Medical properties: Stimulant, tonic, antisyphilitic, vermifuge.

Genus Robinia (Locust Tree). R. pseudacacia (False Acacia, Common Locust). Medical properties: Bark of root—emetic, cathartic, expectorant, tonic; flowers—anti-spasmodic.

Genus Lathyrus (Vetchling). L. maritimus (Beach Pea). Medical properties: Emollient; used in poultices,

Genus Baptisia (False Indigo). B. tinctoria (Wild I.); B. leucantha; B. australis (Blue False I.). Medical properties: Alterative, antiseptic, emetic, cathartic, emmenagogue, discutient.

Genus Cercis (Judas Tree, Red Bud). C. Canadensis (American R.). Medical properties: Antiscorbutic. Fruit edible.

Genus Cassia (Senna). C. marilandica (Wild Senna); C. chamæcrista (Large-flowered Sensitive or Partridge Pea); C. nictitans (Wild Sensitive Plant). Medical properties: Cathartic, anthelmintic, diuretic, antisyphilitic.

Genus Gymnocladus (Kentucky Coffee Tree). G. Canadensis). Medical properties: Seeds and pods—emetic, nervine; leaves—cathartic.

Order Rosaceæ (Rose Family). 11 genera, 35 species.

Genus Prunus (Almond, Peach, Plum, etc.). P. Pennsylvanica (Wild Red Cherry); P. serotina (Wild Black C.); P. Virginiana (Choke C.). Medical properties: Bark—bitter, tonic, antiperiodic, astringent, expectorant, stimulant, nervine, sedative.

Genus Spiræa (Meadow Sweet). S. opulifolia (Nine Bark); S. tomentosa (Hardhack, Steeple Bush); S. lobata (Queen of the Prairie). Medical properties: Astringent, tonic.

Genus Gillenia (Indian physic). G. stipulacea (Bowman's Root, American Ipecac). Medical properties: Emetic, cathartis, sudorific, expectorant, tonic.

Genus Geum (Avens). G. vernum (Early Water A.); G. rivale (Water A., Purple A., Chocolate Root); G. strictum (Upright A., Field A., Herb Bennet); G. Virginianum (White A.). Medical properties: Astringent, tonic, sedative, antipyretic, stomachic. Sometimes used as a substitute for tea and coffee.

Genus Potentilla (Cinque-foil, Five-finger). P. Norvegica (Norway Cinque-foil); P. Canadensis (Five-finger); P. anserina (Silver Weed); P. Fructicosa (Shrubby Cinque-foil); P. palustris (Marsh Five-finger). Medical properties: Astringent, tonic.

Genus Fragaria (Strawberry). F. vesca (Common S.); F. Virginiana (Wild Strawberry). Medical properties: Fruit—antiscorbutic, refrigerant; leaves—astringent; both diuretic.

Genus Rubus (Bramble). *R. idæus* (Garden Raspberry); R. strigosus (Wild Red R.); R. occidentalis (Wild Black R., Thimbleberry, Black Cap); R. villosus, (High or Common Blackberry); R. Canadensis (Low B., Dewberry). Medical properties: Astringent, diuretic, laxative, antiscorbutic, refrigerant; bark of the root—antiemetic.

Genus Agrimonia (Agrimony). A. Eupatoria (Common A.); A. parviflora (Small-flowered A.). Medical properties: Mild astringent, stomachic.

Genus Rosa (Rose). R. Carolina (Swamp R.); R. lucida (Dwarf Wild R.); R. blanda (Early Wild R.). Medical properties: Astringent, tonic.

Genus Cratægus (Hawthorn, White Thorn). C. coccinea (Scarlet-fruited T.); C. tomentosa (Black or Pear T.); C. punctata (Red Haw); C. crus-galli (Cockspur T.). Medical properties: Astringent, tonic, expectorant. Bark, leaves and fruit used.

Genus Pyrus (Pear, Apple). P. coronaria (Crab Apple); P. arbutifolia (Chokeberry); P. Americana (American Mountain Ash). Medical properties: Astringent, tonic, detergent, antiscorbutic, esculent.

Order Saxifragaceæ (Saxifrage Family). 5 genera, 6 species:

Genus Ribes (Currant, Gooseberry). R. floridum (Wild Black Currant). Medical properties: Fruit—diuretic, diaphoretic, anti-scorbutic; bark—lithontryptic.

Genus Hydrangea. H. arborescens (Wild H., Seven-barks). Medical properties: Root—diuretic, lythontryptic; leaves—tonic, sialagogue, diuretic, cathartic.

Genus Parnassia (Grass of Parnassus). P. Caroliniana. Medical properties: Seed—diuretic, aperient, sedative (locally).

Genus Heuchera (Alum Root). H. Americana (Common A.). Medical properties: Root—powerfully astringent.

Genus Mitella (Mitre-wort, Bishop's-cap). M. nuda (Coolwort); M. dyphylla. Medical properties: Astringent, diuretic.

Order Hamamelaceæ (Witch Hazel Family). 2 genera, 2 species:

Genus Hamamelis (Witch Hazel). H. Virginiana. Medical properties: Bark and leaves—astringent, tonic, sedative, discutient.

Genus Liquidambar (Sweet Gum Tree, Bilsted). L. styraciflua. Medical properties: Bark—nervine; flowers—aromatic.

Order Halorageæ (Water Milfoil Family). 1 genus, 1 species:

Genus Hippuris (Mare's Tail). H. vulgaris. Medical properties: Diuretic, astringent.

Order Onagraceæ (Evening Primrose Family). 4 genera, 7 species:

Genus Circæa (Enchanter's Nightshade). C. lutetiana. Medical properties: Resolvent, vulnerary.

Genus Epilobium (Willow Herb). E. palustre; E. augustifolium (Fire-weed, Willow-herb); E. coloratum. Medical properties: Tonic, astringent, demulcent, emollient.

Genus Œnothera (Evening Primrose). Œ. biennis (Common Evening P.). Medical properties: Emollient, astringent.

Genus Ludwigia (False Loose Strife). L. alternifolia (Seed-box); L. palustris (Phthisic Weed, Water Purslane). Medical properties: Pectoral, expectorant. Used in asthma.

Order Lythraceæ (Loose Strife Family). 1 genus, 1 species:

Genus Lythrum (Loose Strife). L. alatum. Medical properties: Astringent, mucilaginous, antisyphilitic.

Order Cactaceæ (Cactus Family). 1 genus, 1 species:

Genus Opuntia (Prickly Pear, Indian Fig). O. vulgaris (Common Prickly Pear). Medical properties: Refrigerant.

Order Cucurbitaceæ (Gourd Family). 1 genus, 1 species:

Genus Sicyos (Star Cucumber). S. angulatus. Medical properties: Seed—diuretic, purgative.

Order Umbelliferæ (Parsley Family). 7 genera, 11 species:

Genus Archangelica. A. atropurpurea (Great Angelica, Purple A.); A. hirsuta. Medical properties: Root and seed—cathartic, stimulant, emmenagogue.

Genus Heracleum (Cow Parsnip). H. Lanatum. Medical properties: Stimulant, antispasmodic, carminative, narcotic.

Genus Pastinaca (Parsnip). *P. sativa* (Common Parsnip). Medical properties: Seed and tops—diuretic.

Genus Æthusa (Fool's Parsley). *Æ. cynapium.* Medical properties: Emetic, irritant; poisonous.

Genus Thaspium (Meadow parsnip). T. barbinode; T. aureum; T. trifoliatum; T. atropurpureum. Medical properties: Alterative, diaphoretic, antisyphilitic.

Genus Bupleurum (Thorough Wax). *B. rotundifolium.* Medical properties: Aromatic.

Genus Discoplura (Mock Bishop Weed). D. capillacea var-costata. Medical properties: Aromatic, pungent, tonic, diuretic, carminative.

Order Araliacæ (Ginseng Family). 1 genus, 4 species:

Genus Aralia. A. spinosa (Angelica Tree, Hercules' Club); A. racemosa (Spikenard); A. nudicaulis (Wild Sarsaparilla, American S.); A. quinquefolia (Ginseng). Medical properties: Aromatic, alterative, pectoral, diaphoretic, depurative, stimulant, balsamic, sialagogue, sudorific, emetic.

Genus Conium (Poison Hemlock). *C. Maculatum.* Medical properties: Narcotic, sedative, anodyne, anti-spasmodic, diuretic,deobstruent.

Order Cornaceæ (Dogwood Family). 2 genera, 7 species:

Genus Cornus (Cornel, Dogwood). C. Canadensis (Dwarf Cornel, Bunchberry); C. florida (Flowering Dogwood); C. sericea (Silky D., Kinnikinik); C. circinata (Round-leaved D., Green Osier); C. paniculata (Panicled Cornel, White Cornel); C. alternifolia (Alternate-leaved C.). Medical properties: Bitter, tonic, astringent, diaphoretic, antiperiodic.

Genus Nyssa (Tupelo, Pepperidge, Sour Gum). N. multiflora (Black Gum, Common T.). Medical properties: Acid, refrigerant.

Order Caprifoliaceæ (Honeysuckle Family). 6 genera, 13 species:

Genus Linnæa (Twin-flower). L. borealis. Medical properties: Bitter, subastringent, antirheumatic.

Genus Triosteum (Feverwort, Horse Gentian). T. perfoliatum; T. augustifolium. Medical properties: Emetic, tonic, diaphoretic, laxative.

Genus Symphoricarpus (Snowberry). S. racemosus (Snowberry); S. occidentalis (Wolfberry); S. vulgaris (Indian Currant). Medical properties: Root—Astringent, alterative, tonic.

Genus Diervilla (Bush Honeysuckle). D. trifida. Medical properties: Diuretic, astringent, alterative.

Genus Viburnum (Arrow Wood). V. lentago (Sheepberry); V. prunifolium (Black Haw, Sweet H.); V. dentatum (Arrow Wood); V. acerifolium (Dock Mackie); V. opulus (Cranberry Tree). Medical properties: Bark—diuretic, detergent, tonic, astringent, antiperiodic, antispasmodic, expectorant, alterative; bark of root of Black Haw—a valuable uterine sedative.

Genus Sambucus (Elder). S. Canadensis (Common Elder).

Medical properties: Bark—cathartic, emetic; flowers—diuretic, diaphoretic; exanthematous.

Order Rubiaceæ (Madder Family). 3 genera, 7 species:

Genus Galium (Bedstraw, Cleavers). G. asprellum (Rough Bedstraw); G. trifidum (Small B.); G. triflorum (Sweet-scented B.); G. aparine (Cleavers, Goosegrass); G. circæzans (Wild Liquorice). Medical properties: Diuretic, diaphoretic, demulcent, expectorant; herb of Goosegrass—aperient, refrigerant.

Genus Mitchella. M. repens (Partridge Berry). Medical properties; Diuretic, astringent, alterative, tonic, parturient.

Genus Cephalanthus. C. occidentalis (Button-bush). Medical properties: Tonic, laxative, diuretic, aperient, febrifuge.

Order Valerianaceæ (Valerian Family.) 1 genus, 2 species:

Genus Valeriana (Valerian). V. edulis (Oregon Tobacco); V. pauciflora (Wild Valerian). Medical properties: Aromatic, stimulant, tonic, anodyne, nervine, antispasmodic; the former, esculent.

Order Dipsaceæ (Teasel Family). 1 genus, 1 species:

Genus Dipsacus (Teasel). *D. sylvestris* (Wild T.). Medical properties: Root—diuretic, sudorific, stomachic.

Order Compositæ (Composite Family). 43 genera, 90 species:

Genus Cirsium (Thistle). *C. arvense* (Canada T.). Medical properties: Tonic, diuretic, hepatic, antibilious.

Genus Lappa (Burdock). *L. officinalis.* Medical properties: Root—alterative, diuretic, depurative; seed—diuretic, alterative.

Genus Centamæ (Star Thistle). *C. cyanus* (Bluebottle). Medical properties: Stomachic, tonic.

Genus Xanthium (Cocklebur, Clotbur). *X. strumarium* (Common C.); *X. spinosum* (Spiney C.) Medical properties: Same as Lappa officinalis.

Genus Ambrosia (Ragweed). A. trifida (Great Ragweed);

A. artemisæfolia (Romanweed, Hogweed, Bitterweed). Medical properties: Astringent, stimulant, detergent, antiseptic.

Genus Matricaria (Wild Chamomile). M. discorida. Medical properties: Tonic, stomachic, carminative.

Genus Tanacetum (Tansy). *T. Vulgare* (Common Tansy.) Medical properties: Aromatic, tonic, emmenagogue, diaphoretic.

Genus Artemisia (Wormwood). *A. absinthium* (Wormwood); *A. vulgaris* (Mugwort); A. ludoviciana (Western M.); A. biennis (Biennial Wormwood); A. abrotanum (Southernwood); A. Canadensis (Canada W.). Medical properties: Bitter, tonic, deobstruent, astringent, anthelmintic, diaphoretic.

Genus Erechthites (Fireweed). E. hieracifolia (F.) Medical properties: Emetic, tonic, astringent, alterative.

Genus Gnaphalium (Everlasting, Cudweed). G. polycephalum (Sweet-scented E.); G. uliginosum (Low Cudweed, Mouse Ear). Medical properties: Astringent, diaphoretic, pectoral, sudorific, stomachic, mucilaginous, diuretic; juice of former, anaphrodisiac.

Genus Antennaria (Everlasting Immortelle). A. dioricum (Life Everlasting); A. margaritæa (Pearl-flowered E.); A. plantaginifolia (Plantain-leaved E., White Plantain). Medical properties: Astringent, styptic, anodyne, vermifuge, pectoral, diuretic.

Genus Vernonia (Ironweed). V. Noveboracensis (Common Ironweed); V. fasciculata. Medical properties: Bitter, tonic, deobstruent, alterative, depurative.

Genus Liatris (Button Snakeroot, Blazing Star). L. squarrosa (Common Blazing S.); L. cylindracea; L. Scariosa (Rattlesnake's Master); L. spreata (Button Snakeroot). Medical properties: Diuretic, stimulant, tonic, diaphoretic, emmenagogue, alterative.

Genus Eupatorium (Thoroughwort, Boneset). E. purpu-

reum (Purple Bonset or Thoroughwort, Trumpet-weed, Joe-Pye weed, Queen-of-the-Meadow); E. Purfoliatum (Boneset, Thoroughwort); E. sessifolium (Upland Boneset); E. ageratoides (White Lanicle, White Snake-root); E. Aromaticum. Medical properties: Tonic, aromatic, bitter, astringent, diuretic, diaphoretic, antispasmodic, expectorant, aperient, emetic, antiperiodic.

Genus Kuhnia (False Boneset). K. Eupatorioides. Medical properties: Bitter, tonic, diaphoretic.

Genus Conoclinum (Mist Flower). C. coelestinum. Medical properties: Diaphoretic, antispasmodic, expectorant.

Genus Cacalia (Indian Plantain). C. suraveolus; C. reniformis (Great Indian Plantain); C. atriplicifolia (Pale Indian Plantain); C. tuberosa (Tuberous Indian P.). Medical properties: Emollient, pectoral, like Marsh Mallow.

Genus Tussilago (Colt's-foot). T. farfara. Medical properties: Demulcent, emollient, tonic, errhine, expectorant, pectoral.

Genus Senecio (Groundsel). S. aureus (Golden Ragwort, Squaw-weed); S. Colbatus (Butterweed). Medical properties: Astringent, tonic, diuretic, diaphoretic, emmenagogue, expectorant.

Genus Inula (Elecampane). *I. helenium.* Medical properties: Expectorant, emollient, tonic, diuretic, diaphoretic.

Genus Solidogo (Golden-rod). S. bicolor; S. virga-aurea; S. rigida; S. odora (Sweet Golden-rod); S. gigantia. Medical properties: Carminative, stimulant, diaphoretic, diuretic, astringent, styptic.

Genus Aster (Aster, Starwort). A. undulatus; A. cordifolius; A. aestivus (Sampson-Snakeroot); A. puniceus (Cohosh). Medical properties: Antispasmodic, alterative, antirheumatic, aromatic, tonic, nervine, diuretic.

Genus Erigeron (Fleabane). E. Canadense (Horse-weed),

Butterweed); E. bellidifolium (Robin's Plantain); E. Philadelphicum (Common Fleabane); E. annuum (Daisy F., Sweet Scabious); E. strigosum (Daisy Fleabane). Medical properties: Diuretic, astringent, tonic, styptic, diaphoretic, emmenagogue.

Genus Achillea (Yarrow, Sneezewort). *A. millefolium* (Common Yarrow, Milfoil). Medical properties: Astringent, alterative, diuretic, tonic.

Genus Maruta (Mayweed). *M. cotula* (Common Mayweed, Dog-fennel). Medical properties: Bitter, pungent, nervine.

Genus Chrysanthemum. *C. leucanthemum* (Whiteweed, Ox-Eye Daisy). Medical properties: Acrid, tonic, diuretic, antispasmodic; in large doses, emetic.

Genus Helenium (Sneeze-weed). H. autumnale. Medical properties: Tonic, diuretic, diaphoretic, errhine.

Genus Polymnia (Leaf-Cup). P. Canadensis (Leaf-Cup); P. uvedalia (Yellow Leaf-Cup, Bear's-foot). Medical properties: Tonic, antispasmodic.

Genus Silphium (Rosin Plant). S. laciniatum (Rosin-weed, Compass-plant); S. terebinthinaceum (Prairie Dock); S. perfoliatum (Cup-plant). Medical properties: Plant—emetic; root—diuretic, diaphoretic, stimulant, pectoral; gum—stimulant, antispasmodic, pectoral.

Genus Parthenium. P. integrifolium. Medical properties: Aromatic, bitter, stimulant, diuretic, nephritic, lithontryptic.

Genus Coreopsis (Tickseed). C. tripteri—the wildis tripteris (Tall Coreopsis); C. trichosperma (Tickseed, Sunflower). Medical properties: Alterative, expectorant.

Genus Bidens (Bur Marigold). B. frondosa (Common Beggar-ticks); B. connata (Swamp Beggar-ticks); B. beckii (Water Marigold); B. bipinnata (Spanish needles). Medical properties: Expectorant, emmenagogue.

Genus Krigia (Dwarf Dandelion). K. Virginica. Medical properties: Same as Dandelion.

Genus Helianthus (Sunflower). H. giganteus (Wild S.); *H. animus* (Common S.); H. divaricatus (Rough S.); *H. tuberosus* (Jerusalem Artichoke). Medical properties: Diuretic, expectorant, pectoral; the H. tuberosus is edible.

Genus Rudbeckia (Cone Flower). R. laciniata (Common Cone F.). Medical properties: Diuretic, tonic. Also called Thimbleweed.

Genus Echinacea (Hedge Hog, Cone-flower). E. purpurea. Medical properties: Antisyphilitic, depurative, alterative.

Genus Cichorium (Succory, Chickory). C. intybus (Common Chickory). Medical properties: Aperient, deobstruent. bitter.

Genus Hieracium (Hawkweed). H. Scabrum (Rough Hinacium). Medical properties: Bitter, tonic, astringent.

Genus Nabalus (Rattlesnake-root). N. albus (White Lettuce). Medical properties: Bitter, tonic; antivenomous.

Genus Taraxacum (Dandelion). T. Dens-leonis (Common Dandelion). Medical properties: Stomachic, tonic, diuretic, aperient, hepatic.

Genus Lactuca (Lettuce) L. Canadensis (Wild L.); L. sanguinea (Wood or Red L.). Medical properties: Narcotic, anodyne, hypnotic, diuretic, diaphoretic, sedative.

Genus Mulgedium (False or Blue Lettuce). M. acuminatum (Blue L.); M. floridanum (False L.). Medical properties: Leaves considered antivenomous.

Genus Sonchus (Low Thistle). *S. oleraceus* (Common Low Thistle). Medical properties: Bitter, diuretic.

Order Lobeliaceæ (Lobelia Family). 1 genus, 4 species:

Genus Lobelia. L. cardinalis (Cardinal Flower); L. syphilitica (Great Lobelia); L. spicata (Spiked L.); L. inflata (In-

dian Tobacco, Lobelia). Medical properties: Emetic, expectorant, diaphoretic, diuretic, nervine, antispasmodic, resolvent, anthelmintic, cathartic, antisyphilitic.

Order Campanulaceæ (Campanula Family). 1 genus, 1 species:

Genus Campanula (Bell-flower). C. rotundifolia (Harebell). Medical properties: Emetic, pectoral.

Order Ericaceæ (Heath Family). 7 genera, 11 species:

Genus Guylussacia (Huckleberry). G. resinosa (Common or Black H.). Medical properties: Diuretic, astringent.

Genus Vaccinium (Blueberry). V. macrocarpa (American Cranberry); V. arboreum (Farkleberry); V. Pennsylvanicum (Dwarf Blueberry). Medical properties: Astringent, acid, refrigerant, diuretic, antiscorbutic. Fruit esculent.

Genus Arctostaphylos (Bearberry). A. uva-ursi (Common Bearberry). Medical properties: Diuretic, astringent, tonic, nephritic.

Genus Gaultheria (Aromatic Wintergreen). G. procumbens (Creeping Wintergreen). Medical properties: Stimulant, aromatic, astringent, diuretic, emmenagogue.

Genus Azalea (False Honysuckle). A. nudiflora (Purple Azalea, Pinxter Flower). Medical properties: Astringent.

Genus Pyrola (Shin-leaf). P. rotundifolia (Round-leaved Pyrola); P. elliptica (Shin-leaf). Medical properties: Diuretic, tonic, astringent, antispasmodic.

Genus Chimaphila (Pipsissewa). C. umbellata (Pipsissewa, Prince's Pine). Medical properties: Diuretic, tonic, alterative, astringent, antisyphilitic.

Genus Monotropa (Pine sap). M. uniflora (Indian Pipe, Corpse-plant). Medical properties: Root—tonic, nervine, sedative, antispasmodic.

Order Aquafoliaceæ (Holly Family). 1 genus, 4 species:

Genus Ilex (Holly). I. opaca (American Holly); I. decidua; I. verticillata (Black Alder, Winterberry); I. glabra (Inkberry). Medical properties: Tonic, antiseptic, astringent, emetic.

Order Ebenaceæ (Ebony Family). 1 genus, 1 species:

Genus Diospyros (Date Plum, Persimmon). D. Virginiana (Common Persimmon). Medical properties: Astringent, antiperiodic.

Order Plantaginaceæ (Plantain Family). 1 genus, 4 species:

Genus Plantago (Plantain Ribgrass). P. major (Common Plantain, Waybread); P. cordata (Heart-leaved P.); *P. lanceolata* (Ribgrass, Snake P., English P.); P. Virginira (White P., Dwarf P.). Medical properties: Refrigerant, diuretic, astringent, anodyne, antiemetic, alterative, antisyphilitic.

Order Primulaceæ (Primrose Family). 4 genera, 4 species:

Genus Lysimachia (Loose-strife). L. quadrifolia (Yellow Balm, Crosswort). Medical properties, Astringent, stomachic, antiperiodic, expectorant.

Genus Anagallis (Pimpernel). *A. arvensis* (Poor-man's Weather-glass). Medical properties: Poison, nervine, expectorant, stimulant.

Genus Centunculus (Chaffweed). C. minismus (Bastard Pimpernel). Medical properties: Same as Anagallis.

Genus Samolus (Water Pimpernel, Brookweed). S. valeriandi (Water Pimpernel). Medical properties: Purgative.

Order Bignoniaceæ (Bignonia Family). 3 genera, 3 species:

Genus Tecoma (Trumpet Flower). T. radicans (Trumpet Creeper). Medical properties: Sudorific, antivenomous.

Genus Catalpa (Indian Bean). C. bignonioides (Common Catalpa). Medical properties: Antiasthmatic.

Order Orobranchaceæ (Broom Rape Family). 3 genera, 3 species:

Genus Epiphegus (Buch Drops, Cancer Root). E. Virginianum. Medical properties: Nauseant, bitter, astringent, depurative.

Genus Conopholis (Squaw Root, Cancer Root). C. Americana (Earth Club). Medical properties: Same as preceding genus.

Genus Aphyllon (Naked Broom Rape). A uniflorum (One-flowered Cancer Root). Medical properties: Same as preceding genus.

Order Scrophulariaceæ (Figwort Family). 8 genera, 16 species:

Genus Verbascum (Mullein). *V. thapsus* (Common Mullein); *V. blattaria* (Moth M.). Medical properties: Demulcent, diuretic, anodyne, antispasmodic, vulnerary; seed—narcotic, purgative.

Genus Veronica (Speedwell). V. Americana (American Brooklime); V. Virginica (Culver's Root or Physic, Leptandra); V. angallis (Water Speedwell); V. Scutellata (Marsh S.); V. peregrina (Purslane S., Neckweed). Medical properties: Antiscorbutic, diuretic, emmenagogue, hepatic, laxative, purgative, tonic, expectorant, alterative.

Genus Linaria (Toad Flax). L. Canadensis (Wild Toad Flax); L. vulgaris (Toad F., Butter and Eggs). Medical properties: Cathartic, diuretic, deobstruent.

Genus Gerardia. G. quercifolia (Smooth False Foxglove, Golden Oak); G. pedicularia (Bushy Gerardia). Medical properties: Sedative, diaphoretic, stimulant, antiseptic, febrifuge.

Genus Gratiola (Hedge Hyssop). G. Virginiana (Water Jessamine; G. Missouriana (?) Medical properties: Carminative (?), acrid, drastic, vermifuge, diuretic, narcotic.

Genus Scrophularia (Figwort). S. nodosa (Healall). Medical properties: Vulnerary, depurative, emmenagogue.

Genus Chelone (Turtle-head, Snake-head, Balmony). C. glabra. Medical properties: Leaves—bitter, tonic, cathartic, anthelmintic, hepatic.

Genus Pedicularis (Lousewort). Canadensis (Wood Betony, Common Pedicularis). Medical properties: Tonic, sedative, astringent.

Order Verbeniceæ (Vervian Family). 1 genus, 4 species.

Genus Verbena (Vervian). V. hastata (Blue Vervian); V. urticifolia (Nettle-leaved or white V.); *V. officinalis* (European V.); V. bractiosa. Medical properties: Emetic, tonic, expectorant, sudorific, rubefacient.

Order Labiate (Mint Family). 19 genera, 27 species:

Genus Tencrium (Germander). T. Canadense (American Germander). Medical properties: Stimulant, tonic, aromatic, bitter, antirheumatic.

Genus Mentha (Mint). M. viridis (Spearmint); *M. piperita* (Peppermint). Medical properties: Aromatic, stimulant, stomachic, carminative, antispasmodic, diuretic; oil, rubefacient.

Genus Lycopus (Water horehound). L. Virginicus (Bulgeweed); L. sinuatus (Paul's Betony, Bitter Bulgeweed); L. Europœus (Bitter Bulgeweed). Medical properties: Tonic, sedative, astringent, pectoral.

Genus Cunila (Ditany). C. Mariana (Common Ditany). Medical properties: Carminative, stimulant, antispasmodic, diaphoretic, tonic, nervine.

Genus Collinsonia (Horsebalm). C. Canadensis (Richweed, Stone-root). Medical properties: Diuretic, antispasmodic, expectorant.

Genus Hedeoma (Mock Pennyroyal). H. pulbyioides (American Pennyroyal). Medical properties: Stimulant diaphoretic, emmenagogue, carminative, sudorific.

Genus Salvia (Sage). S. lyrata (Cancerweed, Wild Sage,

Lyre-leaved S.). Medical properties: Powerfully astringent—used on warts, etc.

Genus Pycanthemum (Mountain Mint, Basil). P. incamum (Wild Basil); P. pilosum; P. linifolium. Medical properties: Tonic, stimulant, diaphoretic, antispasmodic, carminative, sedative.

Genus Satureia (Savoy) *S. hortensis* (Summer Savoy). Medical properties: Aromatic, stimulant, carminative, emmenagogue, aphrodisiac.

Genus Melissa (Balm, Bee-balm, Sweet Herb). *M. officinalis* (Common Balm). Medical properties: Aromatic, diaphoretic, sedative, emmenagogue.

Genus Monarda (Horse Mint, Balm). *M. fistulosa* (Wild Bergamot); M. punctala (Horse Mint). Medical properties: Aromatic, bitter, nervine, stomachic, deobstruent; stimulant, carminative, sudorific, diuretic, emmenagogue, antiemetic.

Genus Blephilia. *B. hirsuta* (Ohio Horse Mint). Medical properties: Aromatic, tonic, stimulant, carminative.

Genus Nepeta (Cat Mint). *N. cataria* (Catnip); *N. glechoma* (Ground Ivy.) Medical properties: Aromatic, carminative, diuretic, antispasmodic, anodyne, emmenagogue, deobstruent, tonic, stimulant.

Genus Physostegia (False Dragon Head). *P. Virginiana.* Medical properties: Aromatic, stimulant, sudorific, diaphoretic, tonic, cerebral sedative.

Genus Prunella. *P. vulgaris* (Self-heal, Heal-all). Medical properties: Astringent.

Genus Scutellana (Skull Cap). S. gabricula (American Skull-cap); S. Cateriflora (Blue Skull-cap). Medical properties: Bitter, antiperiodic, diuretic, tonic, nervine, antispasmodic.

Genus Marrubium (Horehound). *M. vulgare* (Common

H.) Medical properties: Bitter, aromatic, tonic, diaphoretic, expectorant, pectoral, emmenagogue.

Genus Leonurus (Mothroot). *L. cardiaca* (Lion's-tail, Throatwort). Medical properties: Bitter, nervine, emmenagogue.

Genus Stachys (Hedge Nettle). S. palustris (Clown-heal). Medical properties: Nauseant, expectorant, nervine, emmenagogue, vulnerary.

Order Borraginaceæ (Borage Family). 5 genera, 10 species:

Genus Mertensia (Lungwort). M. Virginica (Virginian or Smooth Lungwort). Medical properties: Demulcent, mucilaginous, pectoral.

Genus Onosmodium (False Gromwell). O. Carolinianum; O. Strigosum (Wild Job's-tear); O. Virginianum. Medical properties: Root and seed—diuretic, tonic, lithontryptic.

Genus Lithospermum (Gromwell). *L. arvense* (Corn Gromwell); *L. officinale* (Common G.) Medical properties: Diuretic, lithontryptic.

Genus Cynoglossum (Hound's Tongue). *C. officinale* (Common Hound's T.); C. Virginianum (Wild Comfrey); C. Morisoni (Beggar's Lice). Medical properties: Mucilaginous, tonic, diuretic, astringent, aromatic, anodyne, narcotic.

Genus Heliophytum (Sun-plant). *H. Indicum* (Indian Heliotrope). Medical properties: Bitter, antivenomous, vulnerary, exanthematous.

Order Hydrophyllaceæ (Water-Leaf Family). 1 genus, 1 species:

Genus Hydrophyllum (Water-leaf). H. Virginicum (Burr Flower). Medical properties: Diuretic, astringent.

Order Polemoniaceæ (Polemonium Family). 1 genus, 2 species:

Genus Polemonium (Greek Valerian, Jacob's Ladder). P.

cæruleum (Greek Valerian); P. reptans (American Greek V.) Medical properties: Astringent, vulnerary, alterative, diuretic, diaphoretic, pectoral, expectorant, antivenomous.

Order Convolvulaceæ (Convolvulus Family). 3 genera, 5 species:

Genus Ipomœa (Morning Glory). *I. nil* (Smaller Morning Glory); I. pandurata (Wild Potato Vine, Man of the Earth). Medical property: Cathartic.

Genus Calystigia (Bracted Bindweed). C. sepium (Hedge Bindweed). Medical properties: Diuretic, cathartic.

Genus Cuscuta (Dodder). C. chlorocarpa; C. glomerata (American Dodder). Medical properties: Bitter, tonic, astringent, antiperiodic.

Order Solanaceæ (Nightshade Family). 4 genera, 9 species:

Genus Solanum (Nightshade). S. Carolinense (Horse-nettle); *S. nigrum* (Black or Common Nightshade); *S. Dulcamara* (Bitter Sweet). Medical properties: Narcotic, anodyne, depurative, deobstruent, diaphoretic, discutient; poisonous.

Genus Physalis (Ground Cherry). P. Pennsylvanica; P. pubescens (Common Ground C.); P. viscosa. Medical properties: Diuretic, sedative.

Genus Datura (Thorn-Apple). *D. stramonium* (Stramonium, Jimson or Jamestown Weed); D. tatula. Medical properties: Stimulant, sedative, narcotic, diuretic, diaphoretic, poisonous.

Genus Lycium. *L. vulgare* (Matrimony vine). Medical properties: Astringent, sedative in erysipelas locally.

Order Gentianaceæ (Gentian Family). 5 genera, 11 species:

Genus Sabbatia. S. angularis (American Centaury). Medical properties: Bitter, tonic, hepatic, vermifuge, emmenagogue, febrifuge.

Genus Erythræa (Centaury). E. centaurium (Common European Centaury). Medical properties: Aromatic, bitter, tonic, febrifuge,

Genus Frasera (American Columbo). F. Carolinensis. Medical properties: Bitter, tonic, antiseptic, febrifuge.

Genus Gentiana (Gentian). G. quinqueflora (Five-flowered Gentian); G. crinata (Fringed G.); G. ochrolenca (Sampson Snakeroot, Yellowish White G.); G. Alba (Whitish G.); G. Andrewsii (Closed G.); G. saponaria (Soapwort G.); G. puberula. Medical properties: Bitter, stomachic, tonic, astringent, anthelmintic, cholagogue, febrifuge.

Genus Menyanthes (Buckbean). M. trifoliata. Medical properties: Bitter, tonic, diuretic, emetic, cathartic, anthelmintic.

Order Loganaceæ (Logania Family). 1 genus, 1 species:

Genus Spigelia (Pink-root, Worm-grass). S. Marilandica (Maryland Pink-root). Medical properties: Narcotic, anthelmintic.

Order Apocynaceæ (Dogbane Family). 2 genera, 3 species:

Genus Fœsterania. F. difformis. Medical properties: Astringent, for warts.

Genus Apocynum (Dogbane, Indian Hemp). A. androsæniifolium (Spreading Dogbane, Wandering Milkweed); A. cannabinum (Indian Hemp). Medical properties: Emetic, cathartic, diuretic, sudorific, expectorant, anthelmintic, sternutatory.

Order Asclepiadaceæ (Milkweed Family). 2 genera, 7 species:

Genus Asclepias Milkweed, Silkweed). A. tuberosa (Butterfly weed, Pleurisy-root); A. incarnata (Swamp Milkweed); A. cornuti (Common Milkweed); A. Sullivantii (Smooth M.); A. vertiallata (Whorled M.). Medical properties: Expecto_

rant, diuretic, diaphoretic, carminative, tonic, alterative, emetic, cathartic.

Genus Aceratis (Green Milkweed). A. longifolia; A. viridifolia. Medical properties: Carminative, tonic, diuretic, antispasmodic.

Order Oleaceæ (Olive Family). 1 genus, 3 species:

Genus Fraximus (Ash). F. Americana (White Ash); F. sambucifolia (Black or Water A.); F. quadrangulata (Blue A.). Medical properties: Bark—tonic, diuretic, cathartic, astringent, antiperiodic, discutient, exanthematous; seed—*antiadipose.*

Order Aristolochiaciæ (Birthwort Family). 2 genera, 3 species:

Genus Asarum (Wild Ginger, Asorabacca). A. Canadense (Snakeroot, Southern Wild Ginger). Medical properties: Aromatic, stimulant, diaphoretic, carminative, expectorant.

Genus Aristolochia (Birthwort). A. Serpentaria (Virginia Snakeroot); A. tomentosa. Medical properties: stimulant, tonic, diaphoretic, diuretic, anodyne, febrifuge, exanthematous.

Order Phytolaccaceæ (Pokeweed Family). 1 genus, 1 species:

Genus Phytolacca (Pokeweed). P. decandra (Common P., Scoke, Gayet). Medical properties: Alterative, resolvent, delegent, deobstruent, antisyphilitic, antiscorbutic.

Order Cheuopodiaceæ (Goose-foot Family). 3 genera, 6 species:

Genus Blitum (Blite). B. capitatum (Strawberry blite). Medical properties: laxative.

Genus Chenopodium (Pigweed, Goosefoot). *C. album* (White Goosefoot or Lambsquarter); C. botrys (Jerusalem Oak, Feather Geranium); *C. ambrosoides* (Mexican Tea); *C.*

anthelminticum (Wormseed). Medical properties: Antiscorbutic, vermifuge.

Genus Atriplex (Orache). A. potula. Medical properties: Cathartic, drastic.

Order Amarantaceæ (Amaranta Family). 1 genus, 2 species:

Genus Amaranthus (Amaranth). *A. hypochondriacus;* A. albus. Medical properties: Astringent, detergent, antiphlogistic, vulnerary.

Order Polygnaceæ (Buckwheat Family). 2 genera, 15 species:

Genus Polygonum. *P. Pusicaria* (Lady's-thumb); P. hydropiper (Common Smartweed, Water-pepper); P. acre (Water Smartweed); P. hydropiperoides (Wild Water-pepper); P. amypibium (Water Fersicaria); P. Virginianum; P. arifolium; P. articulatum (Jointweed); P. aviculare (Knotgrass, Goosegrass Doorweed); P. erectum. Medical properties: Astringent, aromatic, purgative, emetic, antiseptic, diuretic, aperient, diaphoretic, tonic, vulnerary.

Genus Rumex (Dock, Sorrel). R. Britanica (Pale Dock); *R. potientia; R crespus* (Curled D.); *R. obtusifolius* (Bitter D.); *R. acetossella* (Field or Sheep Sorrel). Medical properties: Leaves—acid, refrigerant, diuretic, antiscorbutic, laxative; root—alterative, astringent, depurative, tonic, antiscorbutic.

Order Lauraceæ (Laurel Family). 2 genera, 2 species:

Genus Sassafras. S. officinalis. Medical properties: Bark—aromatic, stimulant, alterative, diuretic, diaphoretic; oil—rubefacient, antirheumatic, stimulant, antiseptic.

Genus Lindera (Wild Allspice, Firebush). L. benzoin (Spice-bush, Benjamin-bush). Medical properties: Aromatic, anthelmintic, antiperiodic, febrifuge; fruit—spicy.

Order Thymelsaceæ (Mezereum Family). 1 genus, 1 species:

Genus Dirca (Leather-wood, Mosswood). Medical properties: Bark—acrid, rubefacient, vesicant, sudorific, expectorant; twigs—poison.

Order Santalaceæ (Sandal-wood Family). 1 genus, 1 species:

Genus Comandra (Bastard Toad Flax). C. umbellata. Medical properties: Tonic, febrifuge.

Order Loranthaceæ (Mistletoe Family). 1 genus, 1 species:

Genus Phoradendron (False Mistletoe, American M.). P. flaviscens (American Mistletoe). Medical properties: uterine sedative, oxytocic; useful in menorrhagia, irritability of urethra, bladder, etc.; emmenagogue.

Order Sauraceæ (Lizzard's Tail Family). 1 genus, 1 species:

Genus Saururus (Lizzard's Tail). S. cerunus. Medical properties: Emollient, discutient; used for inflamed breasts.

Order Cerataphyllaceæ (Hornwort Family). 1 genus, 1 species:

Genus Ceratophyllum (Hornwort). C. demersum. Medical properties: Demulcent, emollient.

Order Callitrichaceæ (Water Starwort Family). 1 genus, 3 species:

Genus Callitriche (Water Starwort). C. verna; C. heterophylla; C. autumnalis. Medical properties: Diuretic, in dropsy.

Order Euphorbiaceæ (Spurge Family). 3 genera, 16 species:

Genus Euphorbia (Spurge). E. polygonifolia; E. geyeri; E. serpens; E. glyptosperma; E. maculata (Spotted Spurge); E. humistrata; E. hypericifolia (Large Spotted S.); E. corallata

(Blooming S.); *E. helioscopia* (Sun S., Churnstaff); *E. cyparissias* (Cypress S.); E. dentata; E. heterophylia; E. commuta; E. obsutata. Medical properties: Emetic, diaphoretic, expectorant, cathartic, antisyphilitic, astringent, caustic, tonic, narcotic; poisonous.

Genus Acalypha (Three-seeded Mercury). A. Virginiana (Mercury-weed). Medical properties: Expectorant, diuretic.

Genus Ricinus (Palma Christi, Castor-oil Plant); *R. communis.* Medical properties: Laxative, cathartic, emollient.

Order Urticaceæ (Nettle Family). 8 genera, 11 species:

Genus Ulmus (Elm). U. fulva (Slippery Elm); U. Americana (American or White Elm); U. lata (Winged Elm). Medical properties: Astringent, tonic, alterative, diuretic, expectorant; mucilaginous, demulcent, emollient.

Genus Celtis (Hackberry, Nettle-tree). C. occidentalis (Sugar-berry, American Hackberry). Medical properties: Astringent, anodyne, refrigerant.

Genus Morus (Mulberry). M. rubra; M. alba (White Mulberry). Medical properties: Laxative, refrigerant, vermifuge.

Genus Urtica (Nettle). U. dioica (Common Stinging Nettle). Medical properties: Tonic, astringent, diuretic, pectoral.

Genus Pilea (Richweed, Clearweed, Coolweed). P. punula. Medical properties: Astringent, tonic, diuretic.

Genus Parietaria (Pellitory). P. Pennsylvanica (American Pellitory). Medical properties: Diuretic, deobstruent, emmenagogue.

Genus Cannabis (Hemp). *C. sativa* (Common Hemp). Medical properties: Nervine, anodyne, sudorific, antispasmodic.

Genus Humulus (Hops). H. lupulus (Common Hops). Medical properties: Bitter, nervine, tonic, anodyne, hypnotic, diuretic, febrifuge.

Order Platanaceæ (Plane-tree Family). 1 genus, 1 species.

Genus Platanus (Plane-tree). P. occidentalis (American Plane-tree, Sycamore, Buttonwood). Medical properties: Bark—antiscorbutic.

Order Juglandaceæ (Walnut Family). 2 genera, 9 species:

Genus Juglans (Walnut). J. cincrea (Butternut, White Walnut); J. nigra (Black W.). Medical properties: Bark—cathartic, alterative, tonic, anthelmintic, cholagogue, astringent.

Genus Carya (Hickory). C. olivæformis (Pecan); C. alba (Shell-bark or Stag-bark Hickory); C. sulcata (Western Shell-bark); C. tomentosa (Mocku-nut, White-heart Hickory); C. microcarpa (Small Fruited H.); C. porcina (Pig-nut or Brown H.); C. amara (Bitter-nut or Swamp H.). Medical properties: Shell of nut—astringent; Bark—cathartic.

Order Cupulifereæ (Oak Family). 5 genera, 13 species:

Genus Quercus (Oak). Q. alba (White O.); Q. obtusiloba (Post O.); Q. prinus (Swamp Chestnut O,); Q. monticola (Rock Chestnut O.); Q. imbricaria (Laurel or Shingle O.); Q. falcata (Spanish O.); Q. tinctoria (Black O.). Medical properties: Astringent, tonic, antiseptic, bitter, febrifuge.

Genus Castanea (Chestnut). C. Americana (American Chestnut); C. ferruginea (American Beech). Medical properties: Astringent, tonic, febrifuge.

Genus Conylus (Hazel). C. Americana (American Hazel-nut or Filbert); C. rostrata (Beaked Hazel). Medical properties: Anthelmintic, diuretic, anodyne.

Genus Ostrya (Hop-Horn Beam, Ironwood). O. Virginica (American Hop-Horn B., etc.). Medical properties: Alterative, tonic, antiperiodic.

Genus Carpinus (Horn Beam, Ironwood). C. Americana

(American Horn Beam, Blue or Water Beech). Medical properties: Same as preceding.

Order Myricaceæ. 1 genus, 1 species:

Genus Comptonia (Solander, Sweet Fern). C. asplenifolia. Medical properties: Astringent, diuretic, tonic, diaphoretic, expectorant, sedative, febrifuge.

Order Betulaceæ (Birch Family). 2 genera, 5 species:

Genus Betula (Birch). B. lenta (Sweet, Black or Cherry Birch); B. alba, var. populifolia (American White B.); B. papyracea (Paper or Canoe B.); B. nigra (River or Red B.). Medical properties: Astringent, bitter, aromatic, excitant, diaphoretic, stimulant; juice—anthelmintic, antiscorbutic; fragrant oil.

Genus Alnus. A. gerrulata (American Tag Alder). Medical properties: Alterative, emetic, astringent.

Order Salicaceæ (Willow Family). 2 genera, 11 species:

Genus Salix (Willow). S. humilis (Prairie Willow); S. cordata (Heart-leaved W.); S. nigra (Black W.); S. eriocephala; *S. fragilis* (Brittle W.); *S. alba* (White W.); *S. Babylonica* (Weeping W.). Medical properties: Bitter, astringent, tonic, antiseptic, deturgent, antiperiodic, antirheumatic.

Genus Populus (Poplar, Aspen). P. tremuloides (American Aspen); P. angulata; P. grandidurtata (Large-toothed A.); P. balsamifera, var. candicans (Balm of Gilead). Medical properties: Stimulant, tonic, diuretic, antiscorbutic, stomachic, antiperiodic, febrifuge.

Order Coniferæ (Pine Family). 7 genera, 9 species:

Genus Pinus (Pine). P. strobus (White Pine). Medical properties: Gum—pectoral, aromatic, bitter, astringent.

Genus Larix (Larch). L. Americana (American Larch or Tamarack). Medical properties: Laxative, tonic, diuretic, alterative.

Genus Taxodium (Bald Cypress). T. distichum (Southern Cyprus). Medical properties: Diuretic, carminative, vulnerary.

Genus Cupressus (Cypress). C. thyoides (White Cedar). Medical properties: Leaves—stimulant, aromatic, diaphoretic, stomachic.

Genus Thuja (Arbor Vitæ). T. occidentalis (American Arbor Vitæ, White Cedar of the North). Medical properties: Stimulant, diaphoretic, anthelmintic, antispasmodic, febrifuge.

Genus Juniperus (Juniper). J. Sabina (Savin); J. Virginiana (Red Cedar); J. Communis (Common Juniper), Medical properties: Bark and leaves—aromatic, stimulant, diuretic, emmenagogue, diaphoretic.

Genus Taxus (Yew). T. baccata, var. Canadensis (American Yew, Ground Hemlock, Dwarf Yew). Medical properties: Nervous sedative.

Order Araceæ (Arum Family). 5 genera, 6 species:

Genus Arisæma or Arum (Indian Turnip). A. tryphyllum (Indian Turnip); A. dracontium (Green Dragon, Dragon-root). Medical properties: Stimulant, expectorant, carminative, diaphoretic.

Genus Peltandra (Arrow Arum). P. Virginica. Medical properties: Stimulant, irritant.

Genus Calla (Water Arum). C. palustris (Wild Water Arum). Medical properties: Root—mucilaginous, stimulant, caustic (?.)

Genus Symplocarpus (Skunk Cabbage). S. fœtidus. Medical properties: Root—expectorant, sudorific, antispasmodic; Fruit and seed—pectoral.

Genus Acorns (Calamus). A. calamus (Sweet Flag). Medical properties: Root—aromatic, carminative, tonic, vulnerary.

Order Typhaceæ (Cat-tail Family). 2 genera, 2 species:

Genus Typha (Cat-tail Flag). T. latifolia (Common Cat-tail or Reed-mace). Medical properties: Root—astringent, emollient, detergent.

Genus Sparganium (Bur-reed). *S. ramosum* or racemosum. Medical properties: Emollient, mildly astringent.

Order Alismaceæ (Water Plantain Family). 2 genera, 2 species:

Genus Alisma (Water Plantain). A. plantago, var. Americana. Medical properties: Leaves—vesicant, diuretic, lithontryptic.

Genus Sagittaria (Arrow Head). S. variabilis (Arrow-weed). Medical properties: Farinaceous, lactagogue.

Order Hydrocharidaceæ (Frog's-bit Family). 1 genus, 1 species:

Genus Valisneria (Eelgrass). V. spiralis (Tape-grass). Medical properties: Plant—refrigerant, demulcent.

Order Orchidaceæ (Orchis Family). 5 genera, 11 species.

Genus Goodyera (Rattlesnake Plantain). G. repens (Net-leaf Plantain); G. pubescens (Adder's-violet). Medical properties: Demulcent, antiscrofulous.

Genus Arethusa. A. bolbosa. Medical properties: Emollient, anodyne.

Genus Corallorhiza (Coral Root). C. multiflora; C. odontorhiza (Crawley-root); Medical properties: Root—diuretic, sudorific, sedative, diaphoretic, febrifuge.

Genus Aplectrum (Putty-root, Adam and Eve). A. hyemale. Medical properties: Root—mucilaginous, pectoral.

Genus Cypripedium (Lady's Slipper, Moccasin Flower). C. arietinum (Ram's-head); C. candidum (Small White Lady's S.); C. parviflorum (Smaller Yellow Lady's S.); C. pubescens (Larger Yellow Lady's S.); C. spectabile (Showy Lady's S.).

Medical properties: Root—tonic, stimulant, diaphoretic, nervine antispasmodic, narcotic, hypnotic.

Order Bromelliaceæ (Pineapple Family). 1 genus, 1 species.

Genus Tillandsia. T. usneoides (Long Moss, Black Moss, Spanish M.). Medical properties: Powder—astringent, in lard for piles.

Order Amaryllidaceæ (Amaryllis Family). 2 genera, 2 species:

Genus Agave (American Aloe). A. Virginica (False Aloe). Medical properties: Root—bitter, carminative.

Genus Hypoxis (Star-grass). H. erecta. Medical properties: Root—detergent, vulnerary, antiperiodic.

Order Hærnodoraceæ (Bloodwort Family). 1 genus, 1 species:

Genus Aleteis (Colic-root, Star-grass). A. forniosa (Unicorn-root). Medical properties: Bitter, tonic, stomachic, uterine sedative.

Order Iridaceæ (Iris Family). 2 genera, 2 species:

Genus Iris (Flower-de-luce). I. versicolor (Larger Blue Flag). Medical properties: Root—alterative, resolvent, sialagogue, laxative, diuretic, antisyphilitic, vermifuge.

Genus Sisyrinchium (Blue-eyed Grass). S. Bermudiana. Medical properties: Root—acrid, cathartic.

Order Dioscoreaceæ Yam Family). 1 genus, 1 species:

Genus Dioscorea. D. villosa (Wild Yam Root). Medical properties: Antispasmodic, diaphoretic; used in bilious and female diseases.

Order Smiliaceæ (Smilax Family). 1 genus, 4 species:

Genus Smilax (Green-brier, Cat-brier, China-brier). S. rotundifolia (Common Green-brier); S. glauca (American Smilax); S. tamnoides (American China-root); S. herbacea (Carrion Flower). Medical properties: Root—depurative, alterative, diuretic, emmenagogue.

Order Liliaceæ (Lily Family). 11 genera, 17 species:

Genus Trillium (Three-leaved Nightshade, Wake-Robin, Birthroot). T. sessile; T. grandiflorum (Large White Trillium); T. erectum (Purple Trillium); T. nivale (Dwarf White T). Medical properties: Root—astringent, tonic, antiseptic, expectorant, diaphoretic, alterative, emmenagogue.

Genus Chamælirium (Devil's Bit.) C. luteum (False Unicorn Root, Blazing Star). Medical properties: Root—alterative, tonic, diuretic, emmenagogue, vermifuge.

Genus Uvularia (Bellwort). U. grandiflora; U. perfoliata. Medical properties: Tonic, demulcent, nervine.

Genus Melanthium (Bunch Flower). M. Virginicum. Medical properties: Insecticide—a sure remedy for itch; antiseptic (?).

Genus Smilacina (False Solomon's Seal). S. racemosa (False Spikenard). Medical properties: Alterative, diuretic, diaphoretic, depurative.

Genus Polygonatium (Solomon's Seal). P. biflorum (Smaller Solomon's Seal); P. gigantum (Great Solomon's Seal). Medical properties: Root—stimulant, cephalic, expectorant, mucilaginous, tonic.

Genus Asparagus. *A. officinalis* (Common Asparagus). Medical properties: Young shoots—diuretic, aperient, deobstruent.

Genus Lilium (Lily). L. Canadense (Wild Yellow Lily). Medical properties: Root—cathartic; maturating, *i. e.*, favoring the formation of pus.

Genus Erythronium (Dog's-tooth Violet). E. Americanum (Yellow Dog's-tooth, Adder's Tongue). Medical properties; Emetic, emollient.

Genus Scilla (Squill). S. Fraseri (Eastern Quamash, Wild Hyacinth). Medical properties: Emollient to inflamed breasts

Genus Allium (Onion, Garlic). A. tricoceum (Wild Leek); A. cernum (Wild Onion); A. Canadense (Wild Garlic). Medical properties: Bulb—Stimulant, diuretic, expectorant, diaphoretic, anthelmintic, emollient; plant—diuretic, stimulant, emollient.

Order Juncaceæ (Rush Family). 1 genus, 2 species:

Genus Juncus (Rush, Bog-rush). J. bufonius (Toad-grass); J. effusus (Bulrush). Medical properties: Plant—cathartic, diuretic.

Order Pontederiaceæ (Pickerel-weed Family). 1 genus, 1 species:

Genus Pontideria (Pickerel-weed). P. cordata. Medical properties: Emollient, astringent.

Order Commelynaceæ (Spiderwort Family). 1 genus 1 species:

Genus Tradescantia (Spiderwort). T. Virginica (Common Spiderwort). Medical properties: Root—demulcent.

Order Xyridaceæ (Yellow-eyed Grass Family) 1 genus, 1 pecies:

Genus Xyris (Yellow-eyed Grass). X. flexuosa. Medical properties: Alterative—in cutaneous diseases.

Order Cyperaceæ (Sedge Family). 1 genus, 1 species:

Genus Eleocharis (Spike Rush). E. polustris. Medical property: Astringent.

Order Gramineæ (Grass Family). 3 genera, 3 species:

Genus Bromus (Brome-grass). B. cilitus. Medical properties: Emetic, anthelmintic, cathartic, diuretic.

Genus Triticum (Wheat). T. repens (Couch, Quitch or Quick Grass). Medical properties: Root—diuretic, aperient.

Genus Phalaris (Canary Seed, Canary Grass). P. canariense. Medical property: Seed—diuretic.

Order Equisetaceæ (Horsetail Family). 1 genus, 4 species:

Genus Equisetum (Horsetail, Scouring Rush). E. arvense (Common Horsetail); E. lævigatum; E. robustum; E. hyemale (Scouring Rush, Shave-grass). Medical properties: Plant—diuretic, astringent.

Order Filices (Fern Family). 7 genera, 12 species:

Genus Polypodium (Polypody). P. incanum (Rock-brake). Medical properties: Root—demulcent, cathartic, anthelmintic.

Genus Adiantum (Maiden Hair). A. pedatum. Medical properties: Plant—pectoral, mucilaginous, expectorant, refrigerant, tonic.

Genus Pteris (Brake). P. aquilina (Common Brake). Medical properties: Root—anthelmintic, in tape worm.

Genus Asplenium (Spleenwort). A. augustifolium; A. trichomanes; A. filix fœmina (Lady Fern). Medical properties: Anthelmintic, astringent.

Genus Aspidium (Shield Fern, Wood F.). A. spinulosum; A. goldianum; A. marginale. Medical property: Anthelmintic.

Genus Osmunda (Flowering Fern). O. regalis (Flowering Fern); O. cinnamomea (Cinnamon Fern). Medical properties: Root—tonic, astringent, mucilaginous, styptic, uterine sedative.

Genus Ophioglossum, O. vulgatum (Adder's-tongue Fern). Medical property: Vulnerary—used in ointments.

Order Lycopodiaceæ (Club-Moss Family). 1 genus, 2 species:

Genus Lycopodium (Club Moss). L. selago (Fir Club Moss); L. lucidulum (Moon-fruit Pine). Medical properties: Emetic, purgative, abortive.

This list comprises about 670 species, or more than one-third of all the plants in the State. There is scarcely a region where there are not plants whose united properties would be sufficient

to battle successfully against any ordinary form of disease. We know too little of vegetable materia medica. It is not necessary that search be made for new species, but it is important that we have more definite information concerning the properties of the plants we already know.

Our medical colleges ought to introduce the study of medical botany into their courses of study, even if not more than a dozen lectures were given to it in the term. That would be a beginning, and would lead to closer study and much more perfect knowledge in this important department of a medical education. There is a great tendency at the present time to leave old remedies and prescribe new. It would be better if the old should be more carefully examined and their therapeutic value more accurately determined, that we might rest upon the experience of the past strengthened by that of the present.

With such a list of plants as the physician in Illinois has to select from, there is abundant opportunity to test the principles laid down in the beginning of this article, and to make more exact classifications of our vegetable remedial agents. Not only so, but a broad field is open for the investigation of particular species, in order that we may learn precisely what to expect from a given remedy when it is prescribed at the bedside.

EDITORIAL.

THE SAMUEL D. GROSS PROFESSORSHIP OF PATHOLOGICAL ANATOMY.

We call attention to the appeal, in another column, to secure in some medical school the endowment of a *memorial professorship*, to be designated the "S. D. Gross Professorship of Pathological Anatomy."

Extended comment upon this subject is rendered unnecessary by the nature of the case. The gifted editor of *The American Journal of the Medical Sciences*, in the July number, current year, of that journal, has well said in the closing lines of his eloquent memoir upon "The Nestor of American Surgery":—

"In the death of Dr. Gross we have lost one of the brightest examples of the skill and learning, the conscientiousness and assiduity, the patience and perseverance, the dignity and morality by which our profession is truly ennobled. He has left us as a heritage a world-wide reputation which, as we regard it with conscious pride, cannot but stimulate us to a higher sense of duty to our profession and to our fellows."

The endowment of a *memorial professorship* is a peculiarly fitting and graceful recognition of one of the crowning glories of Professor Gross's life. He was, in the widest sense of the term, a great teacher. Entirely apart from his brilliant career as Professor of Surgery, his heroic and herculean efforts to

elevate the standard of American Medical Education are fresh in all our memories. Great wisdom has been evinced in the selection of Pathological Anatomy as the subject of the *memorial professorship*. Professor Gross's pioneer researches in this field,—of whose topography, American and English surgeons, even at the present day, are only too ignorant,—are integral portions of the history of American Medicine and Surgery.

The medical school, in which the endowment shall be secured, is not mentioned in the appeal. We trust, however, the Jefferson Medical College will be chosen. For twenty-eight years the welfare of this institution was among the most ardently cherished purposes of the great surgeon's life.

The jealous guarding of the *esprit de corps* of his own profession, the deep interest in the struggles and success of young men, the wide and generous hospitality of his house were characteristics, which endeared Professor Gross to the members of the medical profession, and rendered his name a household word. A touching instance of his cavalier-like disposition occurred a few months before his death. In November of last year, the medical profession was suddenly called to mourn the loss of that great and good man, J. Marion Sims. Professor Gross, in a letter appearing in the columns of the *New York Medical Record*, was *first* to suggest and *first* to contribute to the "Sims Memorial Fund."

On the ninth of June, a meeting of the medical profession of Philadelphia was called to take action upon the death of its illustrious member. At this meeting,—a thoroughly representative one,—a committee was appointed to issue the appeal, which appears in our columns. The names of the distinguished gentlemen,—composing this committee,—constitute an adequate guaranty of the purity of their motives. The Provost of the University of Pennsylvania and the Dean of the Fac-

ulty of the Jefferson Medical College are endeavoring to secure a common end.

Surely, under conditions like these, it is time to lay aside all petty party malice, spite and jealousy!

While the American medical mind is thus strongly moved by feelings of sorrow for its departed chieftain, opposition to the general will seems to be in peculiarly bad taste.

In the editorial columns of the *New York Medical Record*, 19th July, appears an acrimonious criticism of the proposed *memorial professorship*, in which desire to perpetuate the fame of Professor Gross, but unwillingness to contribute to the resources of "a private medical college," is expressed.

We are not at all surprised at this action of the *New York Medical Record*. It is merely a local expression of that thoroughly commercial spirit which has actuated this Journal to preserve silence upon the subject of higher medical education, and has instigated the support of the doctrine that medical gentlemen ought to meet in consultation with men whom they believe to be knaves or fools.

A profound student of medicine, in an essay, "Of Nature in Men," once said:—

"Nature is often hidden, sometimes overcome, seldom extinguished."

We are surprised, however, at the cool effrontery of *The Record*, when it ascribes a similarly sordid mode of thought and action to "many, perhaps most physicians." The cheerful alacrity, with which physicians, generally, and the eminent members of the profession in New York city, particularly, have responded and are responding, is a sufficient refutation of this remarkable assertion.

As the school in which the Chair shall be endowed has not been named, as yet, *The Record's* ill-natured remark is purely

a work of supererogation. But the allusion to the Jefferson Medical College as "a private medical school" is untruthful. *The Record's* idea of American Medical Schools seems to be based upon the conception which is current among certain members of the profession in New York city. "What is an American Medical College?" asked a celebrated New York gynæcologist, very recently. "An association of doctors, who want to make a little money." If we were to judge from the attitude of *The Record* upon this and kindred subjects, and if we were to admit that *The Record* is, in any degree, exponential of the views of the local profession, we would be compelled to believe that the distinguished ex-professor's *dictum* expresses a grave truth, so far as the New York Medical Schools are concerned.

SHALL MEDICAL OFFICERS OF THE ARMY ENGAGE IN PRIVATE PRACTICE?

Again the hue and cry against officers in the army engaging in private practice is heard. *The Medical Record*, of 19th July, publishes a letter, by Dr. John G. Stanton, of New London, Conn., in which a vehement protest against this time-honored privilege is made. *Caduceus*, in *The Record*, of 19th August, ably defends the existing custom. We call attention to a vigorous letter, by a distinguished and experienced army surgeon, which appears in our columns.

The subject is worthy of consideration, since the hostility of the members of the profession in Washington to gentlemen of the Army, Navy and Marine Hospital Service, practicing in that community, is well known, and has instigated more than one abortive effort at legislative interference with the privileges of the class. Such enmity is an opprobrium to the profession. The examinations for admission into the medical corps of the

army and navy are searching, thorough, rigorous, and *strictly impartial.* The Marine Hospital Service claims identity of conditions in these respects. The services are accordingly constituted of truly representative men. This fact is well recognized by the general profession, and a commission in any one of the services is properly regarded as the highest qualifying document attainable by a medical man in America. The same fact has met with abundant recognition among the laity. It is generally conceded that the Engineer and Medical Corps are the best manned organized divisions of the army. The position of the Navy Medical Corps, at the head of the Staff, has been equally well sustained. Very recently, and as the resultant of strenuous efforts, the Marine Hospital Service has achieved a similarly lofty eminence.

As scientific investigators, medical and surgical practitioners, gallant officers, and well-bred gentlemen, the medical officers of the Army, Navy and Marine Hospital Service reflect credit upon the American medical profession and have well earned the universal esteem in which they are held. The very least the profession can do is to leave the medical officers of the United States government in full possession of the limited privileges which they at present enjoy.

In the words of Dr. Heiskell:

"It may not be out of place incidentally to state that to prohibit a medical officer (when his public duties will permit) from extending relief to those of his fellow-citizens who may apply for his services—having confidence in his professional attainments—would be as ungracious to them as it would be devoid of the common dictates of humanity, and might afford as just and perhaps a better cause of complaint on the part of the neighboring community than the one alleged by yourselves, which relates exclusively to private interests."

CORRESPONDENCE.

THE S. D. GROSS PROFESSORSHIP OF PATHOLOGICAL ANATOMY.

American surgery has had no better exponent than Samuel D. Gross; none so honored abroad and at home by institutes of learning; none more revered by his associates and his pupils. His long and brilliant professional career deserves the perpetuation of his name in close association with medical tuition.

In furtherance of this object, the Alumni Association of Jefferson Medical College has inaugurated a movement to secure, in some medical school, the endowment of a Memorial Professorship, to be designated The S. D. Gross Professorship of Pathological Anatomy.

The profession at large, the personal friends of the late Professor Gross, and others interested in elevating the standard of medical education, are cordially invited by the undersigned to participate in this graceful recognition of conduct and services which have largely helped to establish the high standard of excellence to which surgery has attained throughout the United States, and served so much to dignify the repute of American medicine.

Contributions may be sent to Dr. R. J. Dunglison, Treasurer, Lock Box 1274, Philadelphia P. O., and will be acknowledged in the columns of the *Medical News* of Philadelphia.

D. HAYES AGNEW, M. D., *Chairman.*
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Dakota.—Dr. Hector Galloway, Fargo.

Delaware.—Dr. L. P. Bush, Wilmington; Dr. W. Marshall, Milford.

District of Columbia.—Dr. J. S. Billings, Washington; Dr. J. M. Toner, Washington.

Florida.—Dr. E. T. Sabal, Jacksonville.

Georgia.—Dr. W. F. Westmoreland, Atlanta; Dr. A. W.

Calhoun, Atlanta; Dr. H. F. Campbell, Augusta; Dr. Robert Battey, Rome; Dr. A. J. Semmes, Savannah.

Illinois.—Dr. Moses Gunn, Chicago; Dr. N. S. Davis, Chicago; Dr. David Prince, Jacksonville; Dr. F. B. Haller, Vandalia; Dr. J. H. Rauch, Springfield; Dr. W. A. Byrd, Quincy; Dr. H. T. Coffey, Peoria.

Indiana.—D. J. A. Comingor, Indianapolis; Dr. E. S. Elder, Indianapolis; Dr. J. R. Weist, Richmond; Dr. J. E. Link, Terre Haute.

Iowa.—Dr. F. Staples, Dubuque; Dr. J. C. Hughes, Keokuk; Dr. W. F. Peck, Davenport; Dr. W. S. Robertson, Muscatine; Dr. A. G. Field, Des Moines.

Kansas.—Dr. D. J. Holland, Atchison.

Kentucky.—Dr. S. James, Frankfort; Dr. J. W. Thompson, Paducah; Dr. D. W. Yandell, Louisville; Dr. J. S. Bruce, Lexington; Dr. L. Beecher Todd, Lexington.

Louisiana.—Dr. T. G. Richardson, New Orleans.

Maine.—Dr. Alonzo Garcelon, Lewiston; Dr. D. C. Smith, Portland.

Maryland.—Dr. Christopher Johnston, Baltimore; Dr. Allen P. Smith, Baltimore; Dr. J. H. Jamar, Elkton; Dr. W. H. McCormick, Cumberland.

Massachusetts.—Dr. R. L. Hodgdon, Arlington; Dr. D. W. Cheever, Dr. J. Collins Warren, and Dr. E. Gay, Boston; Dr. Nathan Allen, Lowell; Dr. J. H. Mackie, New Bedford.

Michigan.—Dr. G. K. Johnson, Grand Rapids; Dr. T. A. McGraw, Detroit; Dr. W. Brodie, Detroit.

Minnesota.—Dr. A. J. Stone, St. Paul; Dr. R. J. Hill, Minneapolis.

Missouri.—Dr. E. H. Gregory, St. Louis; Dr. A. P. Lankford, Kansas City.

Mississippi.—Dr. A. G. Smythe, Baldwin; Dr. Wirt Johnson, Jackson.

Nebraska.—Dr. S. D. Mercer, Omaha.

New Hampshire.—Dr. I. W. Parsons, Portsmouth; Dr. J. L. Sweet, Newport.

New Jersey.—Dr. B. A. Watson, Jersey City; Dr. Abraham Coles, Newark; Dr. T. J. Marsh, Paterson; Dr. William Elmer, Jr., Trenton; Dr. E. L. B. Godfrey, Camden; Dr. Jas. S. Green, Elizabeth.

New York.—Dr. A. Van Derveer, Albany; Dr. J. C. Hutchinson, Brooklyn; Dr. W. S. Tremaine, Buffalo; Dr. T. H. Squire, Elmira; Dr. F. S. Dennis, Dr. L. A. Sayre, Dr. Louis Elsberg, and Dr. Austin Flint, New York; Dr. E. M. Moore, Rochester; Dr. R. B. Bontecou, Troy; Dr. E. N. Brush, Utica; Dr. H. D. Didama, Syracuse.

North Carolina.—Dr. Eugene Grissom, Raleigh; Dr. R. L. Payne, Lexington.

Ohio.—Dr. P. S. Conner, Cincinnati; Dr. Starling Loving, Columbus; Dr. X. C. Scott, Cleveland; Dr. J. T. Reeve, Dayton; Dr. G. D. Colamer, Toledo; Dr. Alex. Dunlap, Springfield.

Oregon.—Dr. H. Carpenter, Portland.

Pennsylvania.—Dr. Cyrus B. King, Allegheny; Dr. E. G. Martin, Allentown; Dr. W. S. Ross, Altoona; Dr. E. P. Allen, Athens; Dr. P. B. Breinig, Bethlehem; Dr. Jos. Foulke, Buckingham; Dr. A. M. Miller, Bird-in-Hand; Dr. J. L. Suesserott, Chambersburg; Dr. H. B. Van Valzah, Clearfield; Dr. W. B. Ulrich, Chester; Dr. J. K. Lineaweaver, Columbia; Dr. F. Swartzlander, Doylestown; Dr. Traill Green, Easton; Dr. J. L. Stewart, Erie; Dr. R. L. McCurdy, Freeport; Dr. J. W. C. O'Neal, Gettysburg; Dr. T. J. Dunott, Harrisburg; Dr. W. B. Lowman, Johnstown; Dr. M. L. Herr, Lancaster; Dr. S.

T. Davis, Lancaster; Dr. R. Leonard, Mauch Chunk; Dr. T. C. Stellwagen, Media; Dr. R. Rothrock; McVeytown; Dr. Ellis Phillips, New Haven; Dr. A. M. Pollock, Pittsburgh; Dr. Hiram Corson, Plymouth Meeting; Dr. W. Murray Weidman, Reading; Dr. H. Isaac Jones, Scranton; Dr. A. P. Brubaker, Somerset; Dr. G. F. Horton, Terrytown; Dr. G. O. Moody, Titusville; Dr. Varian, Titusville; Dr. D. V. Shoemaker, Warren; Dr. Isaac Massey, West Chester; Dr. R. Davis, Wilkes Barre; Dr. Thos. H. Helsby, Williamsport; Dr. J. W. Kerr, York.

Rhode Island.—Dr. E. T. Caswell, Providence.

South Carolina.—Dr. R. A. Kinloch, Charleston.

Tennessee.—Dr. Richard Douglas, Nashville; Dr. W. T. Briggs, Nashville; Dr. B. B. Lenoir, Lenoirs.

Texas.—Dr. H. C. Ghent, Belton; Dr. T. J. Heard, Galveston; Dr. D. R. Wallace, Waco.

Utah.—Dr. S. O. L. Potter, Salt Lake City.

Vermont.—Dr. Joseph Draper, Brattleboro.

Virginia.—Dr. Hunter McGuire, Richmond; Dr. T. J. Cullen, Petersburg; Dr. J. L. Cabell, University of Virginia.

West Virginia.—Dr. J. E. Reeves, Wheeling.

Wisconsin—Dr. T. P. Russell, Oshkosh; Dr. N. Senn, Milwaukee; Dr. J. T. Reeve, Appleton.

Foreign.—Dr. Th. Billroth, Vienna, Austria; Sir James Paget, London, England; Dr. Rudolph Virchow, Berlin, Prussia; Mr. Thomas Aannandale, Edinburgh, Scotland; Dr. Macleod, Glasgow, Scotland; Mr. Jolliffe Tufnel, Dublin, Ireland; Mr. Reginald Harrison, Liverpool, England.

SHALL ARMY MEDICAL OFFICERS ENGAGE IN PRIVATE PRACTICE?

Sir:—It is a principle that, in the laws governing a community, the rights and privileges of individuals should not be

restricted farther than is necessary to the common good of the whole. To curtail the rights of one class, in the interests of another class, not benefiting the whole, is arbitrary and tyrannical. To restrict the rights of one class of medical men, in the interests of another class, without thereby benefiting the public at large, is a case of this kind. When Dr. Stanton asks that the Army Surgeon at Fort Trumble be prohibited from engaging in civil practice, he asks it, not in the interests of the community, but in his own interest.

The public is not benefited thereby; on the contrary, they would be deprived of the right to call in the Army Surgeon in case they preferred his services to those of Dr. Stanton. The public have a right to select a physician from amongst all those competent and willing to serve it, and any law restricting its privilege in this particular would be an injury and not a benefit. They do not patronize the Army Surgeon for *his* benefit, but for their *own*. The advantage of having the advice of an Army Surgeon is in many parts of the country a very important one, and especially so at small towns and frontier stations, where the local medical talent is not infrequently of inferior quality. People everywhere are entitled to the best medical and surgical advice, which they can procure, and any law restraining them in their choice can only be regarded as an arbitrary injustice.

On the frontier, the Army Surgeon often affords the best, if not the only medical talent at hand, and if he were prohibited from rendering his services the people would be the greatest sufferers. Many instances in proof of this might be cited. If, in the eastern cities, the Army Surgeon who happens to be stationed there is called upon, it is because his services are required or preferred, and so long as he is competent and conducts himself according to the rules of medical practice, governing respectable physicians of the place, it is merely the

exercise of a right to which the public is entitled, the curtailing of which would be oppressive and wrong.

That these cities are over-crowded with *so-called* doctors, and that there exists among them a struggle for life, is no argument in favor of prohibiting a class of competent men from giving the benefit of their services to the public when called upon to do so. Instead of crying out in their own interest and to the detriment of the public for the summary suppression of the few who happen to be subject to military law, it would be far more manly to stand upon their own individual merits for success in the contest and trust to the survival of the fittest.

The number of army surgeons stationed at any one time in eastern cities is insignificantly small as compared with the number of civil practitioners, and ought not to be regarded with so much professional jealousy as to call for their extermination, which, if accomplished by military order, would give no perceptible relief to the pressure which exists there. Instead of attempting to inflict a useless and arbitrary wrong upon a class, already subjected to many hardships and poorly paid, it were far more sensible for the civil physicians to direct their energies against the real source of the difficulties of which they have to complain. It is not in efforts to deprive the public of the services of a few scattering individuals, well trained and competent to practice their profession, but by checking the flood of uneducated and unprepared incompetents, armed with diplomas and turned loose amongst them every year, that the evil is to be remedied. The State legislatures should be made to see the folly of chartering in every little town throughout the land, for the issuing of licenses to kill, so-called medical schools, without any resources or appliances to teach, train or prepare their students to practice the profession into which they are admitted, with full powers and privileges, and, so far as the public can

discriminate, on a par with most of the best schools in the land. The man who has devoted his best energies without stint of time or means and acquired in the most favored institutions at home and abroad a liberal literary and medical education must take his place at the bedside with the ignorant clod-hopper whose preparation consists in his having spent a couple of winters, when there was nothing to do on the farm, in a room over a grocery store in some town listening to a few country doctors tell their experience!

They are both doctors, armed alike with diplomas and licenses to practice. The public can discriminate only in point of personal appearance and manners, but not as to professional attainments. Thus the country is over-crowded with incompetents. Doctoring has been reduced to a business, and the practitioner presents himself in whatever shape will bring him the most victims, whether as homœopath, alopath, eclectic, or a mixture of them all, and thus the people are imposed upon and the profession brought into distrust and disgrace. The remedy for all this is to induce state legislators to grant charters only to institutions properly provided with the means and appliances to teach the different branches of medicine and surgery as they should be taught to turn out competent practitioners. There will be numskulls enough even then; but the first step is to close the doors to the enormous abuses now practiced upon public confidence, guarding its interests by giving it better physicians, of which it stands in great need.

AN ARMY SURGEON.

Chicago, Ill., Aug. 20.

BOOK REVIEWS.

DIE DIPHTHERIE. *Ihre Entstehung, Verhüting Und Behandlung. Von Dr. Med.* C. G. ROTHE, *Altenburg. 12 mo., pp. viii., 92. Leipzig, Ambr. Abel, 1884.*

Dr. Rothe has been favorably known for a long time as a medical writer, journalist and translator. In this little book, the principal facts in connection with the ætiology, prophylaxis, and treatment of diphtheria are collected and woven into a monograph of a remarkable character. While concise, the author is never obscure or confused in the expression of ideas. We note with pleasure the complimentary allusions to the investigations of Professor H. C. Wood and Dr. H. F. Formad, of the Med. Dept., Univ. of Pa. We heartily commend Dr. Rothe's little work to the reading public. W. W. J.

THE THEORY AND PRACTICE OF MEDICINE. *By* FREDERICK T. ROBERTS, M. D., B. SC., F. R. C. P. *With Illustrations. Fifth American Edition. 8 vo., pp. xiii, 1008. Philadelphia:* P. BLAKISTON, SON & CO., *1884. Chicago:* W. T. KEENER.

Professor Alfred Stillé, M. D., of the Medical Department of the University of Pennsylvania, has for years recommended "Roberts' Practice" to the members of his classes as in all

respects the best *text-book* on the subject in the English language. A higher encomium, or more adequate guaranty of general excellence, could not be accorded a medical book. The fifth edition, materially modified by the discussions of the International Medical Congress in 1881, is an invaluable volume, which demands a prominent place in the library of every student and practitioner of medicine.

We note with pleasure the absence of the advertisement list usually found in American publications. W. W. J.

POST-NASAL CATARRH AND DISEASES OF THE NOSE CAUSING DEAFNESS. *By* EDWARD WOAKES, M. D., *Senior Aural Surgeon and Lecturer on Diseases of the Ear, London Hospital, etc. 12 mo., pp. xii, 221. Philadelphia:* P. BLAKISTON, SON & CO.; *Chicago:* W. T. KEENER. 1884.

This little work of 220 pages treats of catarrh in its various forms, and of the ordinary chronic affections of the pharynx. These diseases, of which so much has been said by the laity, have ordinarily been ignored by the regular physician as unworthy his care, and as a result they have constituted a field upon which charlatans have entered with the greatest assurance, and most disastrous results, so far as many of their victims were concerned.

Fortunately there are now many skilled specialists who devote their time to the care of the more intractable of these affections, and our author has placed the whole subject in a lucid manner before the profession at large.

The first impression of the general practitioner, on reading the book, would probably be that it unduly magnifies the importance of the specialist, by overrating the dangers of simple affections and dwelling upon the occult results which only the

laryngologist or aurist can properly treat. However, a more careful perusal will, we think, acquit the author of this charge; for it will be found that he has given specific directions for the earlier treatment of the various affections of this region, which any qualified physician may readily follow; and in pointing out the grave results which sometimes follow affections, so simple, even, as an ordinary cold, he has at the same time called attention to the prominent symptoms which indicate danger, and at the same time has done what we all demand of the specialist, *i. e.*, described the cause, effect, and the treatment of the obstinate cases, of simple diseases, and of their rare complications. Although not fully prepared to accept entirely the author's theories, we can heartily commend the book to all practitioners of medicine. E. F. I.

HOOPER'S PHYSICIAN'S VADE MECUM: *A Manual of the Principles and Practice of Physic; with an Outline of General Pathology, Therapeutics and Hygiene. Tenth Edition. Revised by* WILLIAM AUGUSTUS GUY, M. B. CANTAB, F. R. S., *and* JOHN HARLEY, M. D., *Lond.*, F. L. S. *Vol. I., 8 vo., pp., ix., 338. May Number, Wood's Library of Standard Medical Authors. New York:* WILLIAM WOOD & CO.; *Chicago:* W. T. KEENER. 1884.

We heartily agree with the *dictum* of the American publishers, that "One of the remarkable books in medicine is Hooper's 'Physician's Vade Mecum.'" It is a poor book of a very bad class of books. In one volume of three hundred and thirty-eight pages is contained an abstract of our knowledge of General Physiology, Pathology, Therapeutics, and General Diseases! Typographical errors are numerous and the illus-

trations are wretched. As if to atone for the general poverty of the book, the names of Doctors Guy and Harley appear as revisers on the title page. The gullibility of the American medical practitioner may be prodigious, but it has certain limits. We protest against the *foisting* of such books upon the medical public by publishers, who have won professional confidence by honorable means.

Hooper's "Physician's Vade Mecum" will find no place in a judiciously selected medical library. W. W. J.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY. *Regular Meeting, 19th May, 1884. The President,* Dr. D. A. K. STEELE *in the chair.*—MONOLOCULAR OVARIAN CYST, *exhibited by* PROFESSOR CHAS. T. PARKES, M. D.—UTERINE LEIO-MYOMATA, *exhibited by* PROFESSOR E. C. DUDLEY, M. D.—REPORT OF COMMITTEE ON STATE MEDICINE.

Professor Chas. T. Parkes, M. D. gave the clinical history of a monolocular ovarian cyst, weighing twenty-four pounds. The cyst was exhibited. The patient, nineteen years old, had noticed during the last three years a gradually increasing, abdominal, tumor. She had been treated by a number of physicians for dropsy. Three weeks ago, she came under Dr. Parkes's observation, and the diagnosis of monolocular cyst was made. The tumor increased in size until the abdominal circumference, measured around the umbilicus, was forty-four inches. She enjoyed excellent health, and experienced no especial inconvenience from the tumor.

Four days since, in one of the city hospitals, the cyst was removed.

An incision in the median line of the abdomen,—three and one-half inches in length,—was made, the cyst tapped, twenty-

three pounds of fluid removed, and the characteristic, broad pedicle ligatured.

There were no intestinal or omental adhesions. The sac of the cyst weighed one pound, and, when distended with air showed no corrugations. The hæmorrhage was trifling, and was controlled by ligatures. Since the operation, the patient's temperature has not risen above 99 1-5° F., and the pulse has not exceeded 100.

An uneventful convalescence is anticipated.

Professor E. C. Dudley, M. D. exhibited specimens of two leio-myomata, removed from the uterus by laparotomy. The following is the substance of his verbal report of the case, which presents few parallels in the history of laparotomy.

The patient was referred to Dr. Dudley by Professor R. N. Isham, M. D.

The patient, forty-eight years old, Norwegian, never married, never pregnant, cessation of menstrual epoch last fall; the tumor had developed in two years.

The patient was seen for the first time, by the operator, last January. The abdomen was enormously distended,—at least three times as large as in pregnancy at term,—by a solid mass, which on aspiration yielded negative results. On percussion, *tympanites*, in the right flank and upper epigastric region, was elicited, while flatness was found in the other abdominal regions.

The uterus had been displaced upwards so far as to destroy all outline of the vaginal portion of the cervix. With great difficulty, the *os externum* could be reached by the tip of the finger. It was in extreme ante-location on a level with the pelvic brim. The *corpus* could not be outlined. The posterior *cul de sac* was filled with a mass, which crowded it down to a

level with the perineum. The introduction of the sound was impossible. *Per rectum*, the mass appeared non-adherent. A sound in the bladder passed nearly to the umbilicus. The patient was greatly emaciated.

The operator's diagnosis, at this time, was solid tumor of the uterus, with such extensive attachments, that removal would be almost certainly fatal, and exploratory incision was not to be considered, because the extreme distension of the abdominal walls would have prevented closing the wound over the tumor. The operator's advice to the patient,—like that of a number of eminent surgeons, who had previously seen her,—was adverse to operation. The patient returned after a few weeks, extremely emaciated, suffering from dyspnœa, gastric disturbance, and begged for the operation, as a *dernier ressort*.

The treatment, immediately preparatory to the operation consisted of two Turkish baths, thorough antiseptic irrigation of the vagina, and moderate catharsis.

All furniture in the patient's room, and that immediately adjoining it,—not absolutely necessary,—was removed. Ceiling, walls and wood-work were antiseptically cleansed. The rooms were thoroughly fumigated with burning sulphur for twenty-four hours. The *mons veneris* was shaved; the abdomen and genital canal were thoroughly cleansed by repeated applications of corrosive sublimate.

The instruments were passed through the flame of a spirit lamp, wiped by means of a bit of cotton, with pure carbolic acid, and immersed in a dilute solution of corrosive sublimate, (1 : 4000). The ligatures,—silk,—were first boiled in 95 per cent. sol. of carbolic acid for ten minutes, then in a 5 per cent. sol. for half an hour. Equally scrupulous, detailed attention was given to the disinfection of the assistants. In short, the

conditions were as nearly as possible those of absolute antisepsis.

The operation was performed 17th March, 1884.

Etherization was effected by Dr. R. Tilley with Ormsby's inhaler.

The operator was assisted by Drs. R. N. Isham, C. Fenger, W. W. Jaggard, W. P. Verity, George Isham, and O. E. Larkin.

The abdominal incision was made from umbilicus nearly to the ensiform appendix; it was prolonged downwards about two inches to the bladder, which had been drawn out of place.

If the incision had been made in the usual manner, the bladder would have been penetrated,—as it was found universally adherent over the anterior surface of the tumor. The transverse colon, pushed by the tumor in its growth, was found firmly adherent for a distance of eight inches in the upper epigastric region. A bundle of vessels, one inch in diameter, penetrated the tumor, just below the adherent colon. A nearly spherical, solid tumor, fourteen inches in diameter, springing from the left posterior wall of the *corpus uteri*, developing between the folds of the broad ligament,—which enveloped not less than half of its surface on the left and posteriorly,—with its anterior and inferior surfaces covered by the adherent bladder, presented itself. The tumor was also extensively attached posteriorly to the peritoneal surfaces. To the right of the tumor, lay the intestines, unattached.

The removal of the tumor *seemed* impossible, retreat *was* impossible. The adhesions and attachments were broken up by tearing, dissection and enucleation. All bleeding vessels were so carefully ligatured, as soon as wounded, that when the tumor was lifted out, the abdominal cavity was dry. In dis-

secting off the attached bladder, the *urachus* was opened. This gave rise to a spirt of urine. The opening was secured by a ligature. The tumor was now freed from all except its uterine attachments, which embraced the entire left posterior portion of the *corpus*. Around this attachment,—too short to be designated as a pedicle,—was passed, four times, a solid, round, pure rubber cord, ¼ inch in diameter, and securely tied. Hemorrhage, which, during the long and tedious enucleation, had, at times, been severe, was now well controlled. The tumor was then cut away, by an incision about three inches on the distal side of the rubber ligature. This left a pedicle, composed of uterine tissue, five inches in diameter. Another tumor, filling the *pelvis minor*, of the size and shape of the fœtal skull, springing from the posterior wall of the uterus, by an attachment two inches in diameter, was ligatured and removed in the same way. These ligatures had been placed temporarily with the expectation of removing them and of substituting clamps and the extra-peritoneal treatment; but now, after nearly two hours of rapid operating,—in which the peritoneal surfaces were extensively injured,—the patient showed unmistakable signs of impending collapse. The danger of substituting the clamp for the temporary ligatures was too great, so the latter were made permanent, and the intra-peritoneal plan adopted. Perforated, soft rubber drainage tubes, two-thirds of an inch in diameter, were placed respectively in the anterior and posterior *cul de sac*. The abdominal incision,—which, during the operation, had been lengthened to eighteen inches,—was closed with silk sutures, and dressed antiseptically. Immediately after the operation, the patient's pulse was scarcely perceptible, but she rallied from shock with surprising rapidity. Temperature, during the first eight days, ranged from 98–101° F.; pulse, 100 to 120; respiration was accelerated to a correspond-

ing degree; flatus passed downwards on the second day. On the third day the drainage tubes were removed, no discharge having escaped through them. No unfavorable symptoms were observed until the ninth day, when the temperature, in the morning, rose to 102° F., in the evening, to 103° F.; pulse was correspondingly accelerated; during the eleventh and twelfth days, temperature reached 104–5° F., pulse and respiration keeping equal pace.

Professor C. Fenger, M. D. was summoned to a consultation. A rapidly increasing tumor, observed in the lower hypogastric region, rising out of the pelvis, of a non-fluctuating character, was thought to be pus confined within tense walls.

An abdominal incision was made and about one pint of thick, fœtid pus was discharged from a cavity, which nature had made by the agglutination of peritoneal surfaces around it.

This cavity was washed out and soft rubber drainage tubes re-introduced to the bottom of Douglas's *cul de sac*, which bounded the cavity inferiorly, where the end of the tube could be easily felt by the vaginal touch. The abscess cavity was frequently washed out with dilute solutions of carbolic acid.

For two days, temperature and pulse continued nearly normal; the temperature, finally, again rose to 104–5° F. Examination revealed no new accumulation of pus, and the rise in temperature being attributed to imperfect drainage, a counter-opening was made, between the *cul de sac* of Douglas and the vagina, about the twelfth day, and the drainage tube was passed downwards to the vulva. This opening was preceded by careful disinfection of vagina and vulva. An antiseptic dressing of cotton and iodoform was placed over the vulva.

From this time, temperature and pulse gave little anxiety. The patient rapidly improved. All bodily functions became

nearly normal. The patient's appetite was voracious. Surprising quantities of food were consumed. The cavity continued to discharge pus, and was washed out with greater or less frequency according to the temperature. On the twenty-seventh day, introducing the finger into the cavity through the abdominal wound, the lesser ligature was hooked out, together with some adherent silk thread. On the thirty-seventh day, the larger ligature, with a large sloughing mass, was, in the same way, removed. On the forty-first day, the drainage tube was drawn up into the cavity and the opening through the *cul de sac* closed spontaneously in a few days, so as to leave but one opening,—that is, through the lower angle of the abdominal incision.

Now, on the sixty-third day after the operation, the patient's convalescence may be regarded as secure. Pallor has left her face, she has greatly increased in flesh, sleeps perfectly, and, were it not for the slight drainage, would consider herself well.

The larger tumor, after the escape of much fluid, weighed thirty pounds; the smaller tumor weighed two pounds. Professor Lester Curtis, M. D., on microscopic examination, pronounced the tumors to be *leio-myomata.*

The case illustrated a few truths.

It establishes a wide latitude of possibilities for operation in the abdominal and pelvic cavities. It almost implies that we may be on the eve of operating in the most dangerous cases of uterine myomata quite as safely as in the more serious cases of ovarian cyst. The operator discussed at length the subjects of elastic and inelastic ligatures, intra and extra-peritoneal plans of treatment in laparo-myomotomy, and expressed the hope that future experience would establish the laws governing the intra-

peritoneal treatment of the pedicle upon as sound a basis as in the case of ovarian cysts. L. H. M.

REPORT OF COMMITTEE ON STATE MEDICINE.—*Mr. President and Gentlemen:*—Your committee has the honor to report as follows: It has taken into consideration as coming within the scope of the resolution under which it was appointed, the following subjects:

First: The question of confidential communications. Second: The state of the laws regulating the supply of anatomical material. Third: The laws regulating medical education. Fourth: The laws regulating the relations of the insane to the community. Fifth: The question of suppressing indecent quack advertisements. Sixth: The question of practicing under an alias.

I. There is no statute regulating the relations of physicians and patients, as regards confidential communications, and the committee would recommend that the Society use all its efforts to secure the passage of the act now in force in New York, which is as follows: "No practitioner of medicine, surgery or midwifery shall be permitted to disclose any information which may be obtained from patients for purposes of diagnosis, prognosis, or treatment."

II. In regard to the supply of anatomical material, the committee would recommend the act proposed by the Chicago Demonstrators' Association as being adapted to meet the emergency.

III. In regard to the question of medical education, the committee believes that no degree of Doctor of Medicine shall

be deemed valid, which has been conferred by any medical college on any one, who shall not have been previously examined as to his general education by a committee of the medical society of the school of practice, which said student proposes to follow; such committee to be chosen from members of the society not connected with any college; the certificate of the society to constitute evidence of such examination. The committee also believes that no medical college should hereafter be incorporated in this State, unless the same has an endowment fund of $150,000, free of all claim. The committee believes that no person should be hereafter permitted to enter upon the practice of medicine unless he shall have been previously examined by a board of examiners on Anatomy, Chemistry, Obstetrics and Gynæcology, Surgery, Practice of Medicine, Hygiene and State Medicine, Psychiatry, Therapeutics, Materia Medica and Pharmacy. This board of examiners should be chosen from the various schools of practice in proportion to the numbers of practitioners of each school. Five of these should be chosen by the various State medical societies, none of whom should in any way be connected with the medical colleges. The President and Secretary of the State Board of Health should be, *ex-officio*, members of this board. The surgeons of the *Army*, *Navy* and *Marine Hospital Service* should be exempted from the provisions of this act.

IV. The laws respecting the insane are in a very bad state and require revision in several particulars. By the present system of trying insanity—as if it were a crime—the insane are deprived of that early treatment which is their due, and family secrets become the property of the public. The judges often give local politicians the right to select private juries for the trial of friends who have become insane. A better law than the existing one would be one, which would not arouse

public prejudice too much, and at the same time do away with the present unnecessary publicity. The committee believes that no person should be declared insane, and committed to a hospital for the insane, unless after the finding of a commission, appointed by a Judge of a Court of Record. Such commission should be composed of two physicians and one lawyer. This commission should have the power to take testimony and send for witnesses. The finding of the committee should be approved by the Judge of the Court of Record appointing it, and the person whose insanity is questioned should have the right to be represented by counsel chosen by the court, if he so desire. No physician should be appointed to such commission who has not been ten years in the practice of his profession and is not in good standing in the school of medicine to which he belongs; said good standing to be certified to by a medical society of the county in which he resides. At least one of the physicians should be an alienist, and his qualifications should be determined by the fact that he has been one or more years physician in a hospital for the insane, or has other special qualifications. Evidence of these qualifications must be submitted to the State Board of Health, which should issue a certificate that the applicant is a qualified alienist. No lawyer should be appointed to such commission unless he has been ten years in the reputable practice of his profession. No person should be discharged from any institution for the insane unless by a formal legal process, setting aside the finding which determined his insanity, or upon the application of friends, who should then be required to give such bonds, based on real estate, as the Judge of the Court of Record—to whom all such applications should be referred—shall deem necessary for the security of the public; but no person, not deemed recovered from insanity by the superintendent, should be dis-

charged from any institution unless his or her friends have given bonds for their pecuniary responsibility for the results of his or her acts. The committee believes that no Justice of the Peace should permit any insane person or idiot to go at large, who has ever been brought before him on a criminal charge, but should straightway commit such lunatic or idiot to await the action of a commission, for which he should make immediate application to the Judge of the nearest Court of Record. In case such action is neglected, such Justice of the Peace should be held pecuniarly responsible for the results of such lunatic's or idiot's actions. All State institutions for the insane, and county institutions containing more than one hundred patients, should be placed under the control of the State Board of Charities, which should have the powers now delegated to trustees and other supervisory officials, connected with all such institutions. It should be the duty of each medical society of every county to appoint from its members gentlemen, qualified to act on commissions of lunacy. One representative, who with a similar representative from the bar association of the county, should constitute an inspection committee, which should examine monthly every institution for the insane and each recently admitted patient, and report the result of such examination to the State Board of Charities, which should take measures to remedy any abuses which might exist, and should, on the representation of such committee, transfer an insane person from a county to a State institution. All expenses of this inspection should be paid by the county.

No act which is the offspring of disease should be regarded as a crime. Any defense of insanity for crime should be allowed to be raised only at or before indictment, and the person, on whose behalf such a plea is raised, should be instantly transferred to a State institution for the insane and there kept

under surveillance until his trial. The question of his insanity should be tried first before a jury composed of one-third physicians, qualified to act on lunacy commissions, one-third lawyers of equal competency, and one-third of citizens drawn as jurymen, as in ordinary criminal trials; but no one should be competent to serve on such a jury who has a prejudice against insanity as a defense for crime. If such jury find the prisoner insane, he shall be committed to a State institution for the insane for two years, and, at the expiration of that time, if the superintendent deem him recovered, the finding of the jury should be set aside by a lunacy commission, chosen in the way already mentioned. If the jury fail to find him insane, he shall stand his trial for the crime, and should not be allowed to plead insanity as a defense. No medical or legal officer of an institution for the insane should be qualified to sit upon any lunacy commission while he retains his office.

V. The indecent quack advertisements can be summarily dealt with in the manner prescribed in Pennsylvania. The Pennsylvania act is as follows: "Any person who shall publicly advertise in any way treatment of venereal disease, of youthful indiscretion, prevention of conception, of impotence, of self-abuse, or treatment of urinary disease, shall be deemed guilty of a misdemeanor, punishable by fine or imprisonment, or both."

VI. The committee also believe that any person convicted of practicing under an alias should be prohibited from future practice in this State.

Respectfully submitted,

JAS. G. KIERNAN, M. D., Chairman,
E. INGALLS, M. D.,
O. C. DEWOLF, M. D.,
Committee.

CHICAGO MEDICAL SOCIETY.

Regular meeting, 16th June, 1884. The President, Dr. D. A. K. Steele, in the chair.

The following papers, essays and reports of cases were presented: The Significance of Jaundice in Diagnosis, by Dr. Wm. E. Quine. The Effect of Noises upon Certain Forms of Deafness, Dr. G. F. Hawley. A Case of Genito-Urinary Surgery and Median Lithotomy, Dr. William L. Axford. Pathological Specimens of Papillomatous Ovarian Cystic Tumors, Dr. Charles T. Parkes.

The following is a brief synopsis of Dr. Quine's paper on "The Significance of Jaundice in Diagnosis:"

1. Jaundice occurring suddenly, in apparent health, and painlessly, is usually of emotional origin, and transitory.

2. When it depends on disease or injury of the brain, acute atrophy of the liver, snake poison, or an infectious fever, it is always associated with mental disturbance.

3. If it be attended with fever, and well marked, it is secondary to inflammation of biliary passages, pneumonia, toxæmia, or infective inflammation of the portal vein.

4. If it occur suddenly, and is preceded by paroxysmal pain and vomiting, it is caused, nine times out of ten, by biliary calculi.

5. If it be preceded by typical symptoms of gastro-duodenal inflammation, it is obviously of catarrhal origin.

6. Impassable obstruction of the common duct is shown by great intensity of jaundice, clay-colored stools, and in recent cases by distension of the gall-bladder.

7. Jaundice, caused by sudden obstruction of the biliary passages, is always associated with paroxysmal pain and nausea, but there is no means of ascertaining the nature of the obstructing body, except its discovery in the stools.

8. In the rare cases of sudden obstruction by cancerous, hydatid and aneurismal tumors, there is almost always a history of impaired health, enlargement and deformity of the liver, ascites, etc., which, aided by the revelations of physical exploration, will lead to correct differentiation.

9. Sudden return of normal coloring to fæces confirms the diagnosis of obstruction.

10. Occlusion of the cystic duct may be attended with as much pain, nausea, and distension of the gall-bladder, as occlusion of the common duct, but there is no jaundice. In occlusion of the hepatic duct, the same symptoms are present, including jaundice, and excluding distension of the gall-bladder It is often impossible to distinguish between occlusion of the hepatic and the common duct. The former is rare because the duct increases in size from above downward.

11. If jaundice persist after the symptoms of biliary colic or catarrhal inflammation have a month since disappeared; or if jaundice have disappeared after a biliary colic, to return slowly and painlessly, it may be assumed that stricture of the duct has resulted from inflammatory thickening, adhesion of walls, or cicatrization of an ulcer.

12. A history of repeated attacks points to the probability of gall stones.

13. If jaundice come on slowly, without antecedent colic, or catarrh, and without attendant evidence of impaired health or portal obstruction, it is probably caused either by pressure

upon the duct, or by the growth of a tumor within its walls. The pressing body, when large enough, may be readily appreciated, as in the case of pregnancy, ovarian tumor, aneurism, distended colon, etc., but when it is small, or constituted by enlargement of lymphatics in the fissure of the liver, it is apt to escape detection.

14. Slight but persistent jaundice may be due to incomplete occlusion of the common duct, or to complete occlusion of a branch of the hepatic; but usually it is found associated witheither valvular disease of the heart, some disease of the lungs which obstructs circulation, or cirrhosis of the liver.

15. If ascites be associated with it, the disease is either cirrhosis or cancer of the liver. If the liver be abnormally small, the disease is cirrhosis; if it be large, the disease is either hypertrophic cirrhosis or cancer. Differentiation between the two is seldom attended with difficulty.

16. Absence of jaundice does not imply absence of hepatic disease, since the liver may be destroyed by disease, or extirpated by operation, without jaundice ensuing.

17. It is not a prominent symptom of hepatitis, if catarrhal inflammation of biliary passages be excluded. It is not characteristic of hepatic abscess, where, at most, mere muddiness of the complexion is usually seen. These affections are rare in temperate climates, and when encountered, are generally found to be secondary to direct injury of the liver, or to infective inflammation of the portal vein. It is not a symptom of waxy or fatty liver, or of hydatids, excepting as an extraordinary complication.

The paper was ably discussed by Drs. G. C. Paoli, S. H. Stevenson, J. J. M. Angear, A. R. Jackson, J. H. Etheridge,

C. T. Fenn, and R. Tilley. The discussion was closed by Dr. Wm. E. Quine.

A paper upon "The Effect of Noises upon Certain Forms of Deafness" was read by Dr. G. F. Hawley. This paper has already appeared in a former number of the JOURNAL.

Comments upon the paper were made by Professor S. J. Jones and Dr. R. Tilley, and the discussion closed by Dr. Hawley.

MEDIAN LITHOTOMY.

This operation was performed by Dr. Wm. L. Axford, who verbally cited the history of the following case of genito-urinary trouble. An old man, ætat 66, of inherited gouty diathesis, gardener,had been during the last year and a half a sufferer from repeated attacks of nephralgia, which could only be relieved by hypodermics of morphia sulphas gr. ¼. After several attacks this remedy seemed to have no effect in affording him relief, neither did suppositories of belladonna and other anodynes appear to have any control over the pain. He was also a sufferer from chronic cystitis. Some time since, the patient was again seized with the kidney trouble and cystic, combined, which continued three days; his urine was voided in small quantities, very often, as frequently as every five minutes, part of the time. The bladder was full continuously, and catheterization was resorted to every six hours. This produced excessive pain, which continued in spite of large doses of opium, for four hours afterwards. Hyperæsthesia of the uretha became very marked, and the procedure of using the catheter had to be abandoned. It was also ascertained that he

had an enlarged prostate. As a last resort the operation for median lithotomy was done, which very much relieved him, and thus he was saved the torture of many catheterizations A drainage tube was inserted; this had to be frequently removed and freed from the deposits of phosphates and retention of mucus. The urine was excessively ammoniacal and fœtid. But the patient survived only a few days. Autopsy; cirrhotic, gouty liver and kidneys, cystitis of aggravated and obstinate form, enlarged prostate, etc.

The speaker thought he was warranted in making the median incision in the case, he reported, and should do so again under similar circumstances.

Dr. T. C. Parkes supported Dr. Axford in what he had done in the case. He then briefly alluded to two cases of a similar nature,—relieved by this method,—that remained so for six months. Dr. Parkes then gave an interesting verbal report of a case, and also exhibited the specimen, which consisted of papillomatous, multilocular cysts of both ovaries. The cysts had ruptured, and discharged their contents into the peritoneal sac. The history of enlargement embraces a period of only six months. The patient stated she never had an illness previous to the commencement of the abdominal enlargement. She has emaciated rapidly and to great extent. The patient measured 44 inches in circumference at height of umbilicus. The greatest difficulty in the case was the differentiation between ascites and ovarian cysts. There was no œdema, nor had there ever been, of the lower extremities. Percussion gave dullness in all positions—lying, standing, or sitting, the only place of resonance being in the epigastrium. Fluctuation was very distinct on the slightest touch in all directions. Pel-

vic examination revealed that fluctuation was not to be felt in the pelvis. By this means, was also determined the presence of a small growth about the size of the closed fist on the right side. The uterus was displaced forward, close behind the pubes; *cul de sac* of Douglas filled with foreign body. *Diagnosis:*—Ovarian tumor; ruptured sac; contents emptying into peritoneal sac. *Operation:*—22 quarts of fluid were evacuated from the abdomen and tumors; fluid of a dark amber color. No large amount of lymph was precipitated in it after standing. Both ovaries were found diseased, there being present in the left side a ruptured papillomatous tumor. It still contained some fluid, which could not be pressed out at the site of papillary growth. The right one had not ruptured, but was bound down deeply in the pelvis by adhesion. The pelvis was filled by these tumors and their adhesions. After much trouble, the tumors were enucleated and removed, which were, at this point, shown to the members. The operation was done recently, and during the first four days the temperature of the patient had not reached 100° F. She was strong and cheerful, and she was doing well in every respect, but was not yet out of danger. Bleeding was quite free immediately after the separation of the adhesions, but soon ceased altogether under pressure with dry sponges. A drainage-tube was left in the lower end of the incision down to the floor of the pelvis, anticipating free discharge from such an extensive raw surface. The drain off was very free through it for two days. The sigmoid flexure of the colon was adherent for two inches to one of the cysts. For the past two days the temperature was normal.

Dr. A. R. Jackson remarked: The distention by the fluids, in this case, prevented the intestines from rising to the highest

point in the abdomen; and it required, he thought, great skill on the part of the operator to differentiate such a case from one of ascites, hydronephrosis, or ovarian tumor, although before proceeding to operate, an examination of the fluid would have determined it to be ovarian or otherwise. Drysdale has made 2,500 examinations, and, with but one or two exceptions (the speaker thinks), has succeeded in finding the characteristic pathognomonic cell in ovarian cystic fluid. L. H. M.

MARINE HOSPITAL SERVICE.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE. *April 1st to June 30, 1884.*

Bailhache, P. H., Surgeon. Detailed as chairman of Board to examine candidate for appointment into the Revenue Marine Service, May 17, 1884.

Vansant, John, Surgeon. To proceed to Empire City, Oregon, as inspector, April 2, 1884.

Hutton, W. H. H., Surgeon. Granted leave of absence for twenty-five days, May 14 and June 9, 1884.

Miller, T. W., Surgeon. Granted leave of absence to attend the meeting of the American Medical Association, May 1, 1884. To proceed to Pittsburgh, Pa., Ashtabula, Ohio, Buffalo, N. Y., and Detroit, Mich., as inspector, May 10, 1884.

Wyman, Walter, Surgeon. To proceed to Crisfield, Md., as inspector, April 11, 1884. Detailed as president of Board for physical examination of candidates for appointment as cadets in the Revenue Marine Service, May 20, 1884. To examine cadet graduates Revenue Marine Service as to physical qualifications, May 31, 1884.

Detailed as member of Commission to inspect United States buildings at quarantine station on the Delaware River, June 16, 1884.

Wyman, Walter, Surgeon. Detailed to represent the Marine Hospital Service as delegate to the American Medical Association, April 17, 1884.

Austin, H. W., Surgeon. Granted leave of absence to attend the meeting of the American Medical Association, May 2, 1884.

Gassaway, J. M., Surgeon. When relieved by P. A. Surgeon Mead to proceed to Portland, Maine, and assume charge of the Service, April 16, 1884.

Granted leave of absence for thirty days, May 28, 1884.

Stoner, G. W., Passed Ass't Surgeon. When relieved by Surgeon Gassaway to proceed to Cairo, Ill., and assume charge of the Service, April 16, 1884.

When relieved by Surgeon Gassaway, to report in person to the Surgeon-General, June 20, 1884.

Irwin, Fairfax, Passed Ass't Surgeon. Granted leave of absence for twenty-one days, June 19, 1884.

Mead, F. W., Passed Ass't Surgeon. When relieved by Ass't Surgeon Devan, to proceed to Philadelphia, Pa., and assume charge of the Service, April 16, 1884.

Detailed as recorder of Board for physical examination of candidates for appointment as cadets in the Revenue Marine Service, May 20, 1884.

Carter, H. R., Passed Ass't Surgeon. To inspect unserviceable property at the San Francisco Hospital, May 24, 1884.

Wheeler, W. A., Passed Ass't Surgeon. To inspect unserviceable property at the Chicago Hospital, May 24, 1884.

Benson, J. A., Passed Ass't Surgeon. Granted leave of absence for thirty days, April 14, 1884.

When relieved by P. A. Surgeon Stone, to report to him for temporary duty, May 19, 1884.

Banks, C. E., Passed Ass't Surgeon. Detai led as member of

Board to examine physically candidate for appointment into the Revenue Marine Service, May 17, 1884.

To inspect unserviceable property at Baltimore, Md., New York, N. Y., and Boston, Mass., May 26 and June 2, 1884.

Bennett, P. H., Ass't Surgeon. Granted leave of absence for twenty days, June 28, 1884.

Devan, S. C., Ass't Surgeon. To proceed to Port Townsend, W. T., relieve P. A. Surgeon Mead, and assume charge of the Service, April 14, 1884.

Urquhart, F. M., Ass't Surgeon. Granted leave of absence for thirty days, May 22, 1884.

Yemans, H. W., Ass't Surgeon. To report to Capt. M. A. Healey for duty as medical officer during cruise of Revenue Cutter "Corwin," April 16, 1884.

Glennan, A. H., Ass't Surgeon. To proceed to Mobile, Ala., for temporary duty during sickness of P. A. Surgeon Goldborough, June 17, 1884.

APPOINTMENT.—Brooks, Stephen D., M. D., of Massachusetts, having passed the examination required by the Regulations, was appointed as Assistant Surgeon by the Secretary of the Treasury, May 15, 1884.

(Dr. Brooks had previously served as an Acting Assistant Surgeon, from March, 1883, to May, 1884.)

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ORIGINAL COMMUNICATIONS.

ARTICLE I.

REMARKS ON THE OPERATION OF EXCISION OF HIP AND KNEE JOINTS, WITH EXHIBITION OF PATIENTS.

By CHR. FENGER, *Chicago, Surgeon to Cook County Hospital; Prof. of Pathology, Chicago Medical College. Member American Surgical Association.*

[*Read before the Illinois State Medical Society*, 1884.)

Gentlemen: I wish to present to the Society this afternoon a few patients on whom I performed, within the the past four years, excisions either of the hip or of the knee joint. In doing so, it cannot be my intention to discuss fully the subject of these operations; it is too comprehensive a one to be illustrated by a limited number of cases.

During the past ten years our knowledge of articular diseases has been greatly enriched by pathological research, and, at the same time, the practice of joint-surgery has undergone some modifications since the introduction of the antiseptic method. How far our expectations of the success of this

method have been realized, is a matter which admits of discussion. The cases which I wish to exhibit here are, of course, only supposed to throw a little light on a few points in this great question.

Let me first call your attention to the hip joint. It is hardly necessary to point out to you that the old name, morbus coxarius, or caries of the hip joint, is altogether too vague a term to be of any service, even to the practical surgeon. Suppurating synovitis of the hip, osteo-myelitis of the head and neck of the femur, and the tuberculosis of the hip joint, are to be distinguished from each other, not merely because pathology shows them to be different diseases, but because these different diseases, if they are to be treated rationally, demand different modes of treatment.

By far the greater number of cases of morbus coxarius are cases of tuberculosis. It is still an open question whether the tuberculosis originates as a local osteo-tuberculosis in the head or neck of the femur, or in the acetabulum, as Volkmann believes it to do in most cases, or whether it may not primarily be a tuberculous synovitis. But be this as it may, the knowledge of the fact that a primary osteo-tuberculosis often exists a long time without giving any symptoms (of hip disease), until by opening into joint, it causes a tuberculous destruction of the latter, has already had its beneficial application. Timely operations on the great trochanter have, by removing the local osteo-tuberculous focus, saved a number of joints from total destruction. As the hip joint is covered by a thick mass of soft parts, it is materially much less accessible than the knee joint. In hip cases an early diagnosis and treatment, by which the joint may be saved, will probably always remain exceptional. There is hardly a question in practical surgery which is more difficult to decide than whether and when, in a given

case, a tuberculous hip joint should be excised. Statistical tables, showing the mortality or the duration of the disease, teach us absolutely nothing in regard to this point, as in them mild and severe cases are promiscuously thrown together. Taylor gives a mortality of 12½ per cent., in 288 cases, treated without operation, 9 per cent. out of the twelve died of exhaustion and amyloid degeneration of various organs. Now, there is nothing in his tables to render it improbable that judicious operations would, in this instance, have depressed the death rate to a still lower percentage, that they would have saved some of the 9 per cent. who died of exhaustion and amyloid degeneration. Lessing's excision statistics show a mortality of 64 per cent. But, as no distinction is made between early and late operations, they are far from proving that 36 per cent. of otherwise fatal cases of hip-joint were saved by the operation.

In early excisions of the hip, that is, in those performed as soon as an abscess communicating with the joint has formed, and before the patient has become emaciated and exhausted by long-standing fever, the results of the operation are, so far as life is concerned, favorable enough. But we cannot do away with this objection to early excisions, that by them a healthy neck of the femur and trochanter are removed, which, if the abscess had been opened with antiseptic precautions, might have been saved, and might have given the patient a more useful limb. On the other hand, if we wait till one or more abscesses have either broken or been opened with the knife, till, from failure of carefully and constantly applying antiseptic dressings to the discharging fistulas an exhausting fever, which in reality always means pyæmia or septicæmia, has established itself and reduced the patient's strength to a degree dangerous to life,—if, I say, we wait till all this has taken place, then we run the

risk of operating too late. The septicæmia will probably progress in spite of the operation, and the patient will die. By an early operation his life would probably have been saved. We are rendered unwilling to operate early, chiefly by consideration of the fact, that in a great number of cases, where one or more abscesses had formed and been opened and running fistulæ remained for a long time, the latter finally closed up spontaneously, and the patients recovered, and this not so very rarely with a useful and even to a certain extent movable joint. Out of Gibney's 80 cases of spontaneous recovering, this occurred in 48.

In 1873, Volkmann, whom I consider to be the greatest now living authority on joint diseases, gave four indications for excision of the hip in cases of tuberculosis.

(1) The presence of abscesses and fistulæ with copious suppuration, together with a rise in temperature, which indicates that patient's strength is beginning to be undermined.

(2) High fever from acute suppuration in the articular capsule, coming on suddenly in the course of a chronic case.

(3) An iliac abscess, which shows that the acetabulum has been perforated.

(4) Established suppuration with dislocation of the head of the femur backwards, so that it can be felt behind the acetabulum, covered by the gluteal muscles.

I think it safe to add a fifth indication—

(5) Detachment of the epiphysis of the head of the femur and its lying in the articular capsule as a large sequestrum.

When Köster, Volkmann, Schüppel and others discovered, in the course of their investigations, that fungoid arthritis or white swelling, and, consequently, the common form of morbus coxarius, was a local tuberculosis, this as such was for a time also looked upon as an indication for excision of the hip joint.

It was then thought that nothing short of an early removal of the miliary tubercles from the bone, the capsule and the walls of the abscess cavities (if abscesses had already formed) could prevent a general and fatal tuberculous infection from spreading from the primary focus. It so happened that about the same time Lister gave his antiseptic method to the profession, and, as early operations were by this method deprived of their former danger to life, a number of early excisions of the hip were made. Six or eight years ago it was generally deemed justifiable to operate at the time of the formation of the first abscess, if possible before it had opened. Surgeons had become hopeful. Lister's method seemed to secure here, as it does in other cases, healing by first intention, and the operation would eradicate the tuberculosis. Besides, matters seemed very much simplified as to recognizing the right moment when an operation becomes imperative, and expectant treatment is no longer permissible. Unfortunately, however, we were in this respect soon thrown into the old difficulties. It was found by all operators, I believe, but first expressly stated by König (in Langenbeck's Archive, 1880), that healing by first intention, *i. e.* healing in four to eight weeks, still remained a very rare exception. An apparent healing would take place, but after a while new crops of miliary tubercles would grow up in the canals made by the drainage tubes, or, in cases where the openings had closed, in the cicatrices left by them; new abscesses and ulcers would form. Moreover, it was learned that, notwithstanding early operations, about the usual twenty per cent. of these patients would, sooner or later, even after apparent cessation of the local process, succumb to tuberculosis of one or more of the internal organs. As pathology now began to rob this disease of some of its terrors, by demonstrating that, when local, it not so infrequently ended in recovery,

pathological researches concurred with surgical experience in bringing us back to our former more conservative standpoint regarding indications for excisions of the hip. We again shrink from the operation before patient's life is threatened with danger, and are loth to take away living bone, which, after the termination of the disease, might help to form a solid anchylosis, or even a somewhat movable joint.

All of us, however, who have lived through this interesting period in the history of articular surgery, will remember with pleasure, that, in the great majority of these cases of early excisions, the after-treatment was much shorter than it had formerly ever been; the operation promptly and decidedly relieved the patient of his sufferings; the fever disappeared, and the malposition was corrected in a much shorter time than could ever have been done by conservative treatment. Unfortunately we do not know whether the limbs resulting in the end from these operations were the best that could be obtained under the circumstances, or whether their function would not have been improved if the conservative treatment had been employed. We must confess that with regard to the whole question we are somewhat at sea. The final results of early operations and of conservative treatment are not sufficiently different to compel us to make one or the other the invariable rule in the treatment of tuberculous hip disease. In a given case we will, of course, always prefer conservative treatment, if by it we expect to obtain as good a result as by an operation.

Allow me first to present to you a few cases in which early operations were performed.

Case 1.—Edward Prout, eight years old, was admitted to the Cook County Hospital on August 5, 1880. His parents were living, and both of them in good health. A brother

of his was at the time suffering from a tuberculous inflammation of a testicle, following gonorrhœa. Patient had always been in good health till three years and a half ago, when he fell from a swing, his right knee striking on a stone. About one month later he began to complain of pain in the knee. His right leg soon acquired a lameness which would come and go during the following year; the pain in the knee remained rather constant. About one year after receiving the injury he had a hip-support put on by his physician, and extension made. His pain was thereby somewhat relieved. Patient wore the apparatus about three months; it was then taken off, as he was unable to pay for it. Patient was now admitted to St. Luke's Hospital, and was thence, in the summer of 1878, taken to the Mercy Hospital. About one year later an abscess formed in Scarpa's triangle; an opening was made at the upper and inner part of the thigh, and the pus was evacuated; a sinus remained, which was still open at the time of patient's admission to the County Hospital. A short time after the formation of this abscess a second one formed at the upper part of the posterior aspect of the thigh. This abscess, like the first one, was opened, and left a fistula. In the beginning of 1880 patient had apparently recovered. The affected limb had become about 1½ to 2 inches shorter than the sound one, but wearing a high-soled shoe on the foot of the diseased leg, he was able to walk on it. This condition continued up to the beginning of July, 1880, when patient was kicked by a boy in the upper and posterior part of his right thigh, where a swelling, *i. e.*, an abscess, soon formed below the great trochanter. This abscess was opened, and a discharging sinus remained. Patient was now no longer able to walk; he complained of more or less pain all the time, and the three sinuses kept up a constant discharge; the thigh gradually became flexed.

An examination showed the boy to be rather pale and slim; there was no rise in temperature, his pulse was a little accelerated, between 90° and 100°. His lungs, heart and urine were found to be normal. He could walk only with crutches, as he was prevented from putting his right foot to the ground by the adduction and flexion of his hip. There was one and one-half inches shortening. The sinuses on the internal, posterior and external aspects of the thigh discharged a moderate amount of pus. A probe introduced into the external sinus passed up behind the neck of the femur into the joint where roughened bone was felt. Passive motion caused pain in the joint.

On August 20, 1880, an excision of the hip was made, as follows: I made an incision anteriorly along the anterior sinus (Langenbeck's incision), with a view to remove the head of the femur only; but before getting into the joint a considerable venous hæmorrhage occurred, the source of which was probably in the bulbous enlargement formed by the vena saphena magna just before joining the femoral vein. As it was impossible to stop this hæmorrhage in the dense cicatricial tissue of the sinus, otherwise than by ligature en masse, I had to give up the anterior incision. I therefore made the straight external incision over the outer side of the trochanter major, below which I sawed off the bone. As I operated subperiosteally, the cartilaginous portion of the trochanter major was left connected with the periosteum. The head of the femur had disappeared entirely, and the roughened end of the neck was found above and back of the acetabulum, which was covered with a thick, soft mass of tuberculous granulation tissue. I scraped the acetabulum which was not perforated, with a gauge and the sharp spoon; the walls of the sinuses were likewise scraped. Drainage tubes were then inserted in the three sinuses, and made to run up into the acetabulum. The lips of the

wound were then united by sutures, and a Lister's dressing applied. The limb was placed in an abducted position, and a Verity's splint put on, and extension made by means of a piece of rubber tubing and strips of adhesive plaster.

Aug. 21. During the after-treatment the evening temperature remained steady, in the neighborhood of 100°; only once did it rise to 100.5°. Patient was free from pain, and commenced to eat towards the end of the first week. The wound, which healed by first intention and without suppuration, was dressed twice weekly. From the beginning of the third week the drainage tubes were shortened every time the patient was dressed.

Sept. 16. Patient was able to draw his knee up a little.

Sept. 18. The last drainage tube was removed.

Sept. 20. *i. e.*, four weeks after the operation, the wound had healed completely.

Sept. 25. The splint was taken off.

Patient was kept in bed two weeks longer; a high sole was placed under the foot of the sound limb, and he was allowed to walk with crutches.

A year ago an abscess formed behind the trochanter, which was opened, and then closed up in a few weeks.

He is now well nourished, able to bear the whole weight of his body on the affected limb. There is little mobility in the newly-formed joint, about 20° flexion, no ab- or adduction nor rotation.

Case 2.—Fred. Hunneman, a child of healthy parents, began to limp when 3½ years old. Extension by weight and pulley was tried during the first year of the disease. In its third year an abscess formed below the great trochanter; there was considerable pain in the joint, and he had some fever; his general health was impaired, and he emaciated.

The leg was flexed and adducted. Three and one-half years after the commencement of the disease I made an incision of the hip, in February, 1881. After the operation the patient lay in bed eleven weeks, splinted and in extension. In six weeks the wound had healed up to the holes for the drainage tubes. In fourteen weeks he was allowed to be up and about, having a plaster-cast on the limb. There had been no fever, nor drain after the operation, and his general health gradually improved. One year later, in January, 1882, an abscess formed below the gluteus maximus. On opening it, it was found to be an intra-pelvic abscess, which had formed subsequent to the perforation of the acetabulum. It had made its way out of the pelvis through the great sciatic notch along the pyriformis muscle. The walls of the abscess, within and without the pelvis, and the pelvic surface of the sciatic bone, were scraped, (with a sharp spoon). The wound healed in four to five weeks, a small fistula only remaining. Half a year later, in August, 1882, all fistulæ had healed up definitively. Since that time the patient has walked about with crutches, having a high sole under the foot of the sound limb. He is in excellent health. When allowed to try, it is seen that the affected limb is capable of bearing considerable weight.

Case 3.—John Prince. In the fall of 1877 he began to feel pain in his right knee, and later on, in the thigh and groin. There had been no traumatic cause for the coming of this pain, which gradually became worse. He was disabled from walking without a cane, and from sitting down, as he could not flex his thigh sufficiently. About Christmas, 1877, he fell on a stone-sidewalk, striking on his hip, and the pain increased the following day. He then lay in bed, with extension on, five months, but his condition remained about the same. On being so advised, he tried a portable extension ap-

paratus, something like Taylor's machine. Four months subsequently an abscess formed on the outer aspect of the thigh; it was opened, and left a fistula. In January, 1879, he entered the Cook County Hospital, was put to bed and kept in extension for four months; he then got up and walked about with crutches and a high sole under the foot of the other leg. During the following three months the condition remained as it was, the fistula discharging considerably and tenderness existing around the joint. In September, 1879, I excised the joint below the lesser trochanter. During the fall and winter patient had two attacks of erisypelas. He got up nine months subsequent to the operation, two years to his entering the hospital and three and one-half years to the beginning of the disease. Since that time he has steadily improved. He has since picked up so much flesh, that he is now almost twice as heavy as he ever was previous to or during his stay at the hospital. He walks easily with a cane; can bear the whole weight of the body on the limb operated upon. There is considerable active mobility in the new-formed joint, flexion 90°, abduction and adduction 15°, and considerable rotation.

In looking upon these as early operations, we must bear in mind that discharging fistulæ, abscesses, and, in two of the cases, some dislocation of the head of the femur already existed. In the Hunneman case we were dealing with an acetabular coxitis, as was shown by the later formation of a pelvic abscess, which was scraped out and finally healed up. In this case, especially, the pain and fever were promptly relieved by the operation, and from the very day of its performance, the local disease, as well as the general health of the patient, improved uninterruptedly.

A very extensive tuberculosis of the whole upper third of the femur induced me to make an excision of the hip in the following case:

Case 4.—Thomas Hughes, aged 16, was admitted to the Cook County Hospital, September 25, 1882. His parents were healthy; a brother of his, like himself, suffered from hip disease. *Four years previous* to his admission he began to feel some pain in his hip, groin and thigh, and he acquired a slight limp. About the same time an abscess appeared on the dorssum of the foot; it was opened, and a chronic swelling remained, which finally led to the removal of the tuberculous first metatarsal bone. About one year later, patient fell, his hip striking on the floor. A swelling soon appeared in the neighborhood of the hip, and patient complained of pain in the hip and in the knee. Several abscesses formed, and were opened; sinuses remained, which alternately closed and opened, discharging at times considerable quantities of pus. Three months before patient's admission, three small pieces of bone were taken out of a fistulous opening in the groin.

On examination, the leg was found to be flexed and adducted; as there was three inches shortening, the foot did not reach the ground. The region of the hip was rounded and enlarged, and it presented one sinus anteriorly and three on the outer side. Passing the probe along these sinuses, I would feel roughened bone in the hip joint, as well as on the trochanter major and the upper part of the shaft. The foot was deformed, as the removal of the first metatarsal bone had produced a retraction of the great toe.

On September 28, I excised the joint. The incision over the trochanter had to be prolonged downwards over the upper third of the shaft of the femur. The head, trochanter, and 2½ inches of the shaft of the femur had to be removed. On examining the (upper) sawed end of the remaining shaft, it was found thickened, and containing a tuberculous cavity. This was gouged out, and the diseased bone had to be chiseled

away for a distance of 1½ inches, in order to reach healthy bony tissue. The preserved specimen shows considerable periosteal tuberculosis, with irregular periosteal exostoses, in which may be seen, here and there, the rounded cavities characteristic of local osteo-tuberculosis. I scraped the acetabulum and the walls of the existing sinuses, put in a sufficient number of large drainage-tubes, dusted the wound with iodoform and closed it. A Lister's dressing was applied, the limb placed in a Verity's splint, and extension made.

Patient had been weak during the operation, and remained so for some time. There was considerable suppuration during the first month following the operation. The pulse rate varied between 110 and 130, but the temperature never rose much above normal.

Oct. 13. A bed-sore formed over the sacrum, which grew larger for a couple of weeks; later on, bed-sores formed over the spinous processes of the lumbar vertebræ.

Dec. 4. The abdomen was greatly distended, as were also the superficial veins. Percussion showed the spleen to be enlarged considerably, and the dullness of the liver extended six inches below the ribs. (Amyloid spleen and liver.) The urine was clear and acid, and no albumen was detected in it.

Jan. 21. All bed-sores had healed.

Feb. 1. The splint was removed and patient was allowed to sit up and to walk about with crutches, wearing a high sole under the foot of the sound limb.

March 21. Patient was dismissed from the hospital, with an order to present himself once a week to have his limb dressed.

Patient is now robust, of healthy appearance; the fistulæ have been closed for half a year; he can bear the weight of his body on the limb operated upon; has active flexion of about 70°; some ab- and adduction and some rotation.

The extent of active mobility patient has got in his hip is remarkable, considering the amount of bone removed. He can lift his leg and flex the thigh almost to a rectangle (to an angle of almost 90°.) This would be impossible if not a considerable reproduction of the bone had taken place, not only of the removed part of the shaft of the femur, but also, to some extent, of the great trochanter; for flexion is effected by the ilio-psoas muscle.

In cases where the epiphysis of the head of the femur is detached and lies as a sequestrum in the acetabulum or in the abscess cavity surrounding the neck of the femur, there can be no doubt as to the propriety of an operation. However, in a given case of chronic hip disease, the diagnosis of this detachment can, as a rule, not be made. There are no objective symptoms (so to speak) peculiar to this condition. As the detached epiphysis lies either in the acetabulum or is covered by a thick layer of soft parts, it cannot be felt. Unless the history of the case, together with the age of the patient, point toward such a condition—*e. g.*, acute suppurative inflammation (of the joint) immediately following a fall on the great trochanter, or an acute suppurating osteo-myelitis of the upper epiphysis of the femur—the detachment will probably not be detected till the excision produces the necrotic head of the femur. This detachment is rarely met with in tuberculosis. An instance of this kind is the following case:

Case 5.—Benjamin Cleaves, æt. 13, was admitted to the Cook County Hospital Aug. 21, 1883. There had been no consumption in his family, and he himself had always been healthy till, during the latter part of January, 1883, his left hip began to ache a little. As the inconvenience was slight, he paid no attention to it. One evening, while lying in bed, the pain became troublesome, and, in attempting to rise, he sud-

denly felt a sharp pang in the groin. The pain would return again and again, till it finally became almost continuous. Three weeks after the commencement of the pain, patient had become obliged to pass most of his time sitting quietly in a chair. In March, a physician was called, who advised the boy's parents to put him out into the country. In June, an abscess on the outer side of the thigh was evacuated, and from the opening made pus continued to be discharged. No antiseptic dressings were applied. In July, patient returned to the city, and I saw him in the beginning of August. I found him lying in bed, and very much emaciated; pulse 124; temperature 101.7°. The right thigh was adducted and flexed; the slightest movement caused great pain in the hip and in the knee. The knee joint was normal. During the night he would wake up and complain of severe pain in the hip. The region of the joint was rounded, swollen and very tender to the touch. On the outer side of the thigh, three inches below the great trochanter, a fistulous opening discharged a considerable quantity of matter. Patient stated that he had never injured his hip, except two years ago, when, running along a stone wall, he struck against it with his hip, producing an abrasion of the skin. After this abrasion had healed, he felt no pain for a year and a half afterwards. The urine was normal.

Aug. 23.—Excision of the hip. I made the usual straight incision over the great trochanter. A large cavity filled with pus and tuberculous granulative tissue was found to have formed around the great trochanter and the neck of the femur, which were to be removed. The necrosed epiphysis of the head of the femur was found detached in this cavity. The cartilage of the great trochanter was not removed. The walls of the cavity, the acetubulum and the sinuses were scraped. It was all dusted over with iodoform and sufficient drainage

provided for by several button-hole openings, posterior laterally and external to the joint. An antiseptic dressing and a Verity's splint were put on, and extension made.

The wound discharged profusely. The evening temperature never sank below 101° or 102°; pulse always 120 or more. New pocketings of pus took place below the gluteal muscles. Bed-sores formed over the sacrum. In December, pus was detected in the pelvis, burrowing along the iliacus muscle. A little later an incision was made in the lumbar region and a drainage-tube inserted. The injected fluid ran out at the opening in the thigh below Poupart's ligament. This large suppurating tract kept on discharging a great quantity of matter. Patient gradually lost strength, and died of pyæmia, Jan. 8, 1884.

His case might be called one of early operation, if only the time from the beginning of the disease were to be considered. But the operation was made necessary by the profuse suppuration and septic fever, which, continuing in spite of the operation, caused the patient's death. Pyæmia set in in this case, as no antiseptic precautions whatever had been observed at the opening and during the after-treatment of the abscess. In this connection I should like to mention a point, regarding the influence the antiseptic method has had on the course of our treatment of this disease. *It is of the utmost importance, and should never be forgotten.* Just as the antiseptic method permitted us, at least for a time, to operate early, as soon as the first abscess had formed, because by it the operation had been deprived of its great dangers to patient's life, in the same way has the antiseptic method made it possible quietly to wait till the time for the late operation has come, without imperiling thereby the life of our patient, as was done formerly. The history of cold, that is, tuberculous abscesses, before and after

the introduction of Lister's method, is too well known to require much discussion. It is true that, in former times, opening of a cold abscess was not invariably followed by septicæmia. But it is also true that formerly opening of an abscess was always done at the risk of patient's life, and no surgeon could avoid the danger. (Now the patient's life is, in this respect, in the surgeon's hands; if a thoroughly antiseptic dressing be applied and kept over the opened abscess, we know that septicæmia will not set in.)

Late operations, aside from those cases which have progressed too far to be benefited by the surgeon, are preferable, as we ourselves are concerned, for we need not trouble our minds with the question, whether excision had become a necessity or not. As regards the patient, he will, as a rule, have to go through a course of protracted and troublesome after-treatment; the limb may become unduly weakened, either from lack of growth on account of inactivity, or from secondary changes due to chronic inflammation, or atrophy of the bones of the hip joint, of the ilium as well as the head of the femur.

In illustration of these two points, I wish to present the following cases:

Case 6.—Louis Anderson, aged 19, cigar-maker, was admitted to the hospital Sept. 1, 1882. He had suffered for ten years from morbus coxarius of the right hip. A year or two after the beginning of the disease an abscess opened on the outer side of the joint; about four years later it closed again; it was followed by a second and third abscess which opened anteriorly and posteriorly and left discharging sinuses. Pain, shortening and malposition rendered the limb entirely useless. On examining the patient I found the whole right lower extremity atrophied and much smaller than the other on account of retarded growth. Measurement showed the shortening to

amount to 3½ inches: the limb was adducted and flexed; the trochanter was felt an inch and a half above Nelaton's line; but very little passive mobility remained. Pressure on the anterior part of the hip was painful. The knee presented a genu valgum or bow-leg, and the head of the fibula was apparently enlarged.

Sept. 21.—The excision was made through the lower part of the great trochanter. The head of the femur and part of its neck had disappeared. A large abscess was found below the gluteus maximus posterior to the acetabulum; it was opened and its tuberculous walls were removed with the sharp spoon. The wound was closed and dressed in the same manner as in the above cases. During the first month of the after-treatment there was considerable discharge. The evening temperature would rise to 101° or 102° for a few weeks, but then it fell to normal.

Dec. 13.—The drainage-tubes were removed. A large portion of the wound had not healed, but formed an open tuberculous ulcer.

About Jan. 20, 1883, patient got an attack of erysipelas, which spread over the whole right leg. It subsided in two weeks.

Feb. 18.—A peri-articular abscess, situated on the inner side of the knee, was opened.

In the beginning of April, patient had a second attack of erysipelas, which lasted about one week. After patient had been in the hospital one year, he was dischaged, as he was able to walk about with the aid of crutches and a high sole under the foot of the sound leg. He still had large, granulating tuberculous sinuses.

The large granulating sinuses still remain and will have to undergo further treatment of scraping and iodoform dressing.

He can bear the weight of his body on the affected limb; there is only slight active mobility in the new-formed joint.

In this case the five or six years' duration of the disease had caused the growth of the whole extremity to be considerably retarded; besides, it had brought about a deformity of the knee, which in no small degree lessens the usefulness of the limb, and will probably do so for life.

The further disadvantages of a very late operation are well illustrated by

Case 7. Sina Anderson, aged 21, single, daughter of a Nebraska farmer, was sent to the Cook County Hospital by me, and was admitted June 8, 1882. She was of a healthy family, and had herself been a healthy child. In her thirteenth year, eight years before the operation, she was suddenly seized with an acute bilateral inflammation of the hip-joints, which was mild on the right, but severe on the left side. The right hip recovered completely within half a year, but in the left hip the inflammation terminated in an abscess, which was opened half a year after the commencement of the disease, and which had discharged pus ever since. Two years and a half before her admission to the hospital another abscess which had formed was opened, and a second fistula remained. In the beginning of the disease she had been confined to her bed for one and one-half years; after that time she could walk about with the aid of crutches. On account of the adduction and flexion of the thigh, which produced an apparent shortening of over three inches, she was at no time during those eight years able to use the affected limb in walking, or to place its foot on the ground. During the whole period pain and discharge would both come and go. She was obliged to sit in a chair all day, as walking with crutches was very painful. On examination she was found to be well nourished, *i. e.*,

not emaciated, but anæmic. When standing, supported by crutches, she was unable to touch the ground with the toes of her left foot. The flexion and adduction of the affected limb had brought the left knee in a position anterior to and a little above the lower third of the right femur. The thigh and calf were atrophied, the latter was between one and two inches less in circumference than the calf of the sound leg. The soft tissues in the region of the hip had become hard from infiltration, and there was considerable enlargement and deformity. There was no active mobility in the joint; the slight passive movements which could be made, produced severe pain. Three sinuses discharged from the thigh; one opened on the inner side, at the lower angle of Scarpa's triangle; another on the same level on the posterior side, and the third one on the outer side, below and behind the trochanter major. Every one of these three sinuses led the probe up in the direction of the joint, which, however, could not be reached. A fourth sinus opened in the lumbar region, just above the crest of the ilium. The probe passed down in the direction of the joint, but only for a short distance. An examination through the rectum revealed neither thickening of the os pubis nor of the ischium. Pressure on the abdomen just above Poupart's ligament showed considerable thickening of the crest of the ilium, near its anterior superior spine, and also of the ilium on its pelvic surface. This pressure, as well as all pressure in the neighborhood of the hip, was very painful.

Heart and lungs were normal, the liver of normal size, and the spleen not perceptibly enlarged. The urine was straw-colored, clear, acid, and contained neither albumen nor sugar. The diagnosis was morbus coxarius consequent upon acute osteo-myelitis of the neck of the femur and suppurating synovitis.

Jan. 20. Pulse and temperature normal. Once in a while, however, the temperature would rise to 100°.

Jan. 21. Operation: Assisted by Drs. Jacobson and Lee, and the surgical house staff of the hospital, I made an incision ten inches long, in the line over the greater trochanter. I cut through the thickened soft tissues to a depth of over two inches and a half and then reached a cavity, filled with pus and containing the detached epiphysis of the head of the femur. It was of normal shape, denuded of its cartilage, and the articular surface was superficially corroded near its border. The neck of the femur and the greater trochanter were still visible but softened by fatty medullary atrophy to such an extent as to leave only a shell of bone as thin as paper, surrounding the yellow, fatty, butter-like tissue of the marrow. The bone was sawed off below and close to the lesser trochanter. Here, also, there was only a thin shell of compact osseous substance left. After removal of the head of the femur and of the trochanter the leg could be abducted and extended. The pelvis was not touched; no sinuses were seen leading into the ilium. The four sinuses were now scraped and each one received a drainage-tube. The cavity and the wound were dusted over with iodoform, the edges of the wound sewed together, and a Lister's dressing, a Verity's splint applied and elastic extension made.

The course of the after-treatment was normal, patient's appetite fair, and scarcely any rise in temperature till Oct. 25, when it rose to 103°.

Oct. 25. The wound was re-opened and about two ounces of pus were evacuated from the old abscess cavity where the head of the femur had lain. The walls of the abscess cavity were scraped and a counter-opening was made through the gluteus maximus. Thereby the temperature was brought

down again, and the course of the treatment ran on normally till Nov. 23, when a rise in temperature to 104° announced an attack of erysipelas. This lasted a couple of weeks, and left several small subcutaneous abscesses in the leg, which healed up toward the end of the year.

Jan., 1883. In January an abscess was opened on the outer side of the hip.

March 11. The suspensory splint was removed.

April 22. Extension was put on with a view to abduct the leg.

June 3. One of the sinuses closed.

June 18. Patient was anæsthetized and the still open sinuses scraped with the sharp spoon. Several small fragments of necrosed bone were removed.

Aug. 15. The last fistula closed.

In September she was allowed to walk about supported by crutches and wearing a high sole under the foot of the healthy leg.

Oct. 10. She left the hospital for a private residence in the city.

1884. During the winter the sinus which had opened on the outer side of the hip and which had led up to the original abscess cavity, re-opened several times, discharged a little pus for a week or two and then closed again. The leg gradually grew stronger. When lying in bed she could now (in April, 1884,) raise the limb or draw up the knee to an angle of 20–30°; when resting on the sound foot, she had, in the hip joint operated upon, 30° of flexion, 10° of abduction and 10° of adduction. The leg which had become shortened by 2½ inches was in good position; it could bear the weight of the body when she was allowed to try. She was well nourished and not so pale as before the operation. The

thickening of the soft parts around the hip was gradually subsiding; the thickening of the anterior part of the crest of the ilium, as well as that of the bone in the iliac fossa, is the same as before the operation.

She left the city with an apparatus somewhat like Taylor's, but provided with a flexible knee-joint. This apparatus enables her to walk comfortably with the aid of crutches.

In this instance the detachment of the epiphysis of the head of the femur could be suspected from the very beginning of the disease. The history provided sufficiently clear evidence, not of tuberculosis, but of suppurating coxitis, which would probably be osteo-myelitis. Whenever, in a child, in the course of this disease, suppuration sets in, and continues with the formation of multiple abscesses, detachment of the epiphysis may always be inferred, and excision is indicated. If an early operation had been performed in this case, it is more than likely that no chronic osteo-periostitis of the ilium would have occurred, and patient, besides being spared many years of suffering, would have recovered much more speedily after the operation.

Just here, I should like to insert a few words concerning a peculiar form of atrophy of bone, which is found in some cases where there is long-standing suppuration in close proximity to osseous tissue. We should be well acquainted with the matter, as it is of no mean practical importance at the time of operating. In this peculiar form of atrophy, which is especially met with in the near neighborhood of suppurating joints, the osseous substance, cancellous as well as compact, is absorbed, and its space is occupied by a fatty infiltrated marrow. This marrow is poor in vessels, of soft consistency, and bright yellow in color; it somewhat resembles butter. The bone proper is reduced to a mere shell, here and there as thin as paper, and,

on account of its thinness, of an elastic feel. Such bone is, of course, useless. But it is very important to remember that this kind of atrophy is altogether unlike an inflammatory, destructive process. This medullary tissue of the bones, whether young or old, red, or yellow and fatty, is always capable of producing new osseous substance. That formation of new bone does take place in this marrow, after the operation, is well known, especially from cases of excision of the knee. The bones left in this condition of atrophy soon acquired sufficient firmness to bear the weight of the body. We must, therefore, not be misled by this atrophic appearance, into removing more of the bone than we should do, if we saw firm osseous substance before us. The limb of the patient, whom I have just shown you, is now, one and a-half years since excision was made, strong enough to bear considerable weight.

Finally, I wish to mention a case where the operation was performed too late.

Case 8.—Patient was a boy of 12 years, pale and lean. There were several fistulæ, which discharged considerably; the leg was in a position of adduction and flexion. The disease had lasted four years. There was no fever, no tuberculosis of the lungs, no albuminuria. Patient had been in bed for over a year, and his appetite was exceedingly poor. Excision was made, unaccompanied by any complicating accident. There was no unusual vomiting subsequent to the narcosis, nor were any signs of carbolic acid poisoning to be detected in the urine. But patient gradually sank after the operation. His pulse remained 100; his temperature never rose above normal. Eleven days after the operation he died. The autopsy revealed no disease of any of the internal organs, no tuberculosis, no amyloid degenerations. But the whole body was in a condition of extreme anæmia. The wound had not

suppurated, and was apparently on the way to healing by first intention.

Before concluding my remarks on hip operations, I wish to repeat that excision of the hip joint, in a chronic case of hip disease, and performed with observation of antiseptic precautions, is by no means a dangerous operation. The hæmorrhage is trifling, and the shock moderate. The danger of former times, those of a supervening septicæmia, or, as it is often called, especially by English writers, of exhaustion or exhaustive suppuration, it is at the present time in the power of the surgeon to exclude almost to a certainty. Fear of cutting short the patient's life is, consequently, no longer a strong reason for postponing the operation. On the other hand, if the operation be deferred too long, that is till septicæmia has established itself, the patient will die in spite of the operation. The main question to be decided in early operations does not refer to the life of the patient, but to the removal of living bone, which, later on, might become serviceable in supporting the body. Gouging out of the hip joint is technically impracticable; the attempts made have not given satisfactory results. Partial excisions, excisions of the diseased head alone, leaving part of the neck of the femur and the trochanter in place, have been tried, but again abandoned. As complete excision, through or below the great trochanter, is thus the only advisable form of the operation, the question, when should we operate? still presents the greatest difficulties in the solution of the whole problem.

Excision of the Knee Joint. What was said of the tuberculous infection when speaking of the hip joint, of course finds application here also. The results obtained by antiseptic surgery of the knee are excellent. The wounds heal speedily, and the danger to life is small. The death-rate has been reduced from about 30 per cent. to almost a trifling per cent-

age. In a series of thirty-two excisions of the knee, made by Volkmann, there occurred not one death attributable to the operation. In excising a knee joint we have an additional object in view, which plays no part in operations upon the hip, namely, we try to make the cut surfaces of the femur and tibia grow together and to produce a solid anchylosis. The surfaces of the two bones should be cut in such a way as to secure a good position of the leg afterwards; they can easily be kept in apposition by means of wires, pins or nails. In a number of cases the bones unite in the course of a few weeks, the time in which we expect to get a union in cases of subcutaneous fractures.

Such a case is that of

Case 1.—James Carr, 15 years old, entered Cook County Hospital in July, 1879. He suffered from tuberculous arthritis of two years' standing. The leg was flexed to a right angle, the region of the joint was swollen and tender, and on each side there were scars from closed sinuses consequent upon abscesses. Excision was performed August 6. In three weeks a solid osseous union had taken place; in five weeks he was up and walked about with crutches. Ten weeks after the operation he was able to walk without the use of either crutch or cane. In the course of the following half year, tubercular abscesses and sinuses formed in different places in the cicatrix of the excision wound. Scraping and iodoform treatment caused these abscesses to close up definitively; their formation never interfered with the solid osseous union of the two bones.

There is now a solid anchylosis in a straight position; he is able to walk all day long, and perform any kind of work, without having any pain in the leg whatever.*

* This case was published in extenso in a former paper by me, printed in the *Chicago Medical Journal and Examiner*, in July, 1880.

This case, furthermore, illustrates that a secondary local growth of tubercles in and around the cicatrix does not necessarily destroy the effects of the operation, as far as a permanent cure and perfect usefulness of the limb are concerned.

In excisions of the knee joint, where alone we desire to obtain a good, solid anchylosis, we encounter a peculiar difficulty, and that is, that we by no means always get a good, solid anchylosis. For reasons not well understood, the bones do not grow together, but are held in union by more or less ligamentous tissue. This seems to happen more frequently in children than in adults. In these cases it does not always become apparent at once that the function of the limb will be destroyed. A shorter or longer time after the operation the the limb, which at first was in a good straight position, has become a little retracted or flexed, the degree of flexion grows worse, till finally a contracture is developed. In some instances this contracture will begin to come on during the early part of the convalescence; in others, the patient will get up, walk about with an apparently solid anchylosis, the leg will be in good position, and we may congratulate ourselves upon the good results of the operation. But it is too early. One, two, or three years later the contracture of the knee may begin. This contracture may, to a certain extent, be combated by immobilizing apparatus. Our patient should always be made aware of the probability of its occurrence. In adults, immobilizing apparatus put on timely, that is, as soon as any liability to contracture becomes apparent, may prevent the contracture from developing to such a degree as to interfere very much with the use of the limb. The matter is difficult in cases of small children. Not only is the liability to contracture here greater, but all experienced surgeons know that it is difficult and oftentimes altogether impossible to keep immobil-

izing bandages or apparatus on these little patientss for a sufficient length of time, and with a sufficient degree of immobility to prevent secondary contractures from coming on. Sometimes the apparatus produces pain, and cannot be borne on that account. Extension by weight and pulleys cannot be continued sufficiently long; for these little ones will get up and walk about. Small children cannot be taught to use crutches as efficiently as older ones can. They will step on the foot unless prevented therefrom by severe pain. The consequence of all this is, that in these cases nothing can be done to ward off the contracture. One or two years after the operation we often find the leg forming a rectangle with the thigh; the malposition is as bad as it was before the excision. There is, however, this difference between the two conditions that now the white swelling or tuberculosis is gone, the fistulæ have healed, and the joint is neither tender nor painful. The only but great trouble that remains is, that the limb is almost useless for walking purposes.

I have two cases in point here, and will show them to you

Case 2.—William Kane, 9 years old, was admitted to the Cook County Hospital, Sept. 6, 1880. His family history told of no cases of tuberculosis; he had two brothers and two sisters living and healthy. Two and a half years previous to his admission he had jumped off an ice-box and injured his knee. Soon afterwards the knee became swollen and painful. After hot applications had been made for two weeks the swelling was lanced and exit given to half a pint of matter. Poultices were then applied and the discharge continued. Three months later another abscess was lanced on the inner side of the knee and 5-6 ounces of pus evacuated. During the following four months several new abscesses formed along the tibia. He further stated that there had been eleven sinuses, and that

at one time they were all discharging. Those on the leg closed in May, 1880. Patient was very low a year before the date of his admission; his death was then expected every hour, and he wasted away to such an extent that, as his father said, nothing seemed to be left of him but skin and bones. In April, 1880, his health began to improve, and some of the sinuses closed. At the time of his admission his general health was fair; he was fairly well nourished, had a good appetite and slept well. The right knee presented a deformity, the tibia being dislocated backwards, thereby producing an eversion of the foot. The anterior surface of the knee showed a running fistula. Along the inner side of the leg the marks of several closed sinuses were to be seen. The leg was drawn up almost to a right angle, and there was but a minimum of motion left in the joint. Pressure upon the knee was not painful. Patient managed to walk about with the aid of crutches.

Sept. 17. Excision of the knee-joint. A horseshoe-shaped incision was made below the patella and the patella removed. The condyles of the femur were sawed off close to the line of the joint. The external condyle had almost entirely disappeared. The internal condyle formed the inner termination of the sinus which opened at the anterior inner part of the knee. One sixth of an inch of the tibia was removed and the sawn surfaces of the femur and tibia united and held together with two pieces of silver wire. Drainage-tubes were introduced and placed before and behind the bone, the wound was closed and an antiseptic dressing applied. The leg was placed in a straight tin splint with side-doors, and then suspended from a frame.

Sept. 19. Temperature, 102°.

Sept. 22. The leg was dressed; a moderate discharge of matter was found.

Sept. 24. Temperature 101.5°. The wound was dressed daily; the discharge had a perceptible odor.

Sept. 25. An abscess which had formed near the head of the fibula, was opened and gave exit to ½ ounce of pus. In the course of the following week several abscesses formed along the tibia at the places where the old sinuses had been. They were opened and drained one after the other. In the beginning of October the temperature returned to normal. Two weeks later the discharge stopped, and the femur and tibia had become somewhat united. About the middle of October the wound and all the sinuses had healed up, and the splint was removed.

Patient was dismissed with the advice to use crutches in walking and to keep the foot of the diseased leg from the ground. The bony union had not yet grown sufficiently firm and the limb showed some tendency to flexion.

At the present time the leg is flexed in the knee to a right angle; there is no sinus, no swelling, no tenderness; but a solid osseous union between the cut surfaces of the bones did not take place, and we detect a slight mobility on making forcible flexion and extension.

Case 3.—John Hostetter, aged six, fell when one year old. A tuberculosis of the knee joint ensued, and, in the course of the following three years, abscesses formed, and kept discharging. A contraction beyond a right angle, together with dislocation of the head of the tibia backwards on to the posterior surface of the condyles of the femur gradually developed. Two years ago there was an ulcerated surface over the internal condyle of the femur of over an inch in diameter, the bottom of which was formed by the denuded bone. At that time, two years ago, I made the excision; wound and sinuses healed in a couple of months. No perfect osseous union took place. In the course of half a year a contraction to a right angle had been formed. Now there is neither tenderness nor swelling in

the region of the joint, nor any open sinuses, but the leg is flexed to a right angle. He limps about without having any pain, but is greatly inconvenienced by the deformity.

In these two little patients, further surgical procedures, forcible stretching or nei-form osteotomy, will be necessary to procure a straight position of the limbs. In that respect the operations may be said to have failed of accomplishing their objects. It would, however, be going a little too far to assert that in these two cases the operations were entirely useless. In both cases the local tuberculous inflammation, with its attending pain and debilitating effects on the general health, was successfully checked. (Besides, as these patients are always able to use the limb somewhat, the atrophy of inactivity, the retarded growth of the leg and foot, is considerably helped by the operation. This is the more important the younger the child is, as in young children growth is most energetic.)

Volkmann proposed a new method of operating in these cases. He makes a transverse incision, and then bisects the patella. Primary union of the patella may always be expected to take place in an aseptic case. Whether such operations will be followed by contractions or not is a question which the future will have to answer. Older statistics, to be sure, show a greater mortality in cases where the patella was allowed to remain than where it was removed. But this does not constitute an objection to Volkmann's operation, for, armed as we are with the antiseptic method, we no longer fear such dangers as might threaten from a remaining patella.

As we have seen, there is one great imperfection in the results of excision of tuberculous knee joints. Nevertheless, I feel justified in asserting that, in almost all cases of white swelling or tuberculosis of the knee, an attempt should be made to save the limb by conservative surgery, by gouging

out the tuberculous joint, or by an excision of the same, and that amputation of a limb in a case of white swelling, without such previous attempt, should become one of the rarest exceptions.

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ARTICLE II.

CHRONIC ADHESIVE PERIMETRITIS.

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[CONTINUED FROM SEPTEMBER NUMBER.]

The following disorders are to be excluded if it be possible:

Parametritis,

Hematocele,

Myomas,

Engorgements and deviations of the uterus, and

Fecal impaction.

Chronic oöphoritis.

From Parametritis.—In all cases of adhesive perimetritis the free motion of the healthy uterus, upon digital examination, is restricted. This restriction at once leads to exploration of the roof of the vagina. Where the whole roof presents a smooth, hard, resisting mass descending to a uniform depth all around, the probability is always in favor of perimetritis.

Adhesive perimetritis in most cases is readily recognized by the absence of a pelvic tumor, and at the same time by the comparative or absolute immobility of the uterus. The pelvic tumor of parametritis is always readily found, and where it can be outlined above the pelvic brim the presence or absence of cellulitis is made certain. Above the brim, the tumor of parametritis is always adherent to the pelvic wall, whereas that of perimetritis is far enough within the pelvic inlet to allow the fingers to be crowded down between it and the crest of the ilium. Where both affections co-exist, differentiation is impossible.

In parametritis the cervix is always pushed over to one side

of the pelvis to make room for the pelvic phlegmon; whereas in adhesive perimetritis the cervix may be centrally located, and the fundus may be drawn or pushed in any conceivable direction, determinable only with the sound.

Immobility of the uterus is a very important point in the diagnosis both of perimetritis and parametritis. In the former, where the adhesions are extensive, the immobility is absolute; while in parametritis it rarely or never happens that fixation is so complete.

In parametritis, where the hyperplasia involves the psoas and iliacus muscles, the retraction of the thigh affords relief from pain; whereas in perimetritis no relief is experienced till both thighs are retracted, and thus the abdominal pressure is removed.

Diagnosis from Hematocele.—The anamnesis of hematocele is so different from that of perimetritis that not much trouble exists as to its differentiation. In pelvic blood tumors the onset of the symptoms is terrific; this is sooner or later followed by a season of immunity from suffering, to be followed in some cases by severe constitutional symptoms indicative of pelvic cellulitis and peritonitis, and in others by a gradual but sure return to health.

In chronic hematocele, where the anamnesis is obscure and we are in doubt, resort to the exploring needle is usually decisive.

From Myomas and Uterine Engorgements and Deviations.—Conjoined manipulation and the sound usually settle the question of differentiation between fibroids and perimetritis. The same may be said of the diagnosis of pelvic peritonitis and uterine engorgements and deviations.

Diagnosis from Fecal Impactions.—Examination per rectum always reveals the presence of impaction therein, and thus

enables us to exclude such a cause of obfuscation of the diagnosis.

From Chronic Oöphoritis.—Practically, it is useless to differentiate oöphoritis from chronic perimetritis, because where the former exists the latter will almost invariably be found. We can only determine as to the presence of ovarian inflammation by feeling the ovary or by its exquisite tenderness when beyond reach.

Treatment.—The treatment of cases of chronic adhesive perimetritis must be determined by the presence of *tenderness*, or by its comparative absence. The treatment of cases characterized by much tenderness would not only be inappropriate for those characterized by little or no tenderness, but would, in the majority of instances, be productive of great harm. Hence it is best to describe the treatment for each class of cases separately.

Before considering this subject in detail, I desire to emphasize, as strongly as possible, the expediency of being governed by the presence or absence of tenderness as to what course we will pursue. Any physician who will do such an unwise thing as to use a speculum and a probe in examining a woman tender from chronic perimetritis will incur the risk of relighting the pelvic inflammation, whose termination no one can foresee. It is a matter, unfortunately, of too common occurrence that patients go home, after a first examination in the physicians' office, to remain in bed several days with severe pelvic pains. I have knowledge of two such occurrences where the result was a protracted illness in bed, terminating in pelvic abscesses. Of course, no amount of plausible explanation can satisfy patients and their friends that such occurrences were not caused by the physician. I think it may be stated, with every showing of good gynecological authority, *that the*

speculum and probe should not be used in examining patients very tender from previous pelvic inflammations.

Accordingly, I shall consider those cases that present much tenderness *first*, and *secondly* those cases comparatively devoid of tenderness.

1st. All cases presenting the element of *tenderness*, upon digital examination, should be treated with the sole object of causing its disappearance. Its presence depends upon pressure on the nervous supply of the pelvis by inflammatory exudation, or by congested vessels. Consequently, its treatment is simplified into using such measures as will decongest the pelvic vascular supply. Obversely, whatever will increase the congestion present must be most sedulously avoided.

The following measures are calculated to diminish pelvic congestion:

(*a*) Rest in bed.

(*b*) Hot douches.

(*c*) Analgesics, if pain be present.

(*d*) Sitz baths and pelvic packs.

(*e*) Counter-irritation.

(*f*) Laxatives and tonics.

(*g*) Abdominal bandage.

(*a*) *Rest* in bed should be *absolute*. It should be borne in mind that the valveless pelvic vessels become as easily distended as do the veins of the hand when it depends. The horizontal position, which relieves this vascular distension, should be continued for a period after the patient feels well. At first it should be continuous, the patient not being allowed to leave the recumbent position to take food, to evacuate her bladder and bowels, nor to change her clothes, till she can sit up for hours without resultant discomfiture. Later, she can sit up and move about cautiously for an hour or two; still

later, she will be able to be up all day, excepting an hour or two at midday, without experiencing any suffering. When lying down it is well, in very tender patients, to have the knees held up somewhat by a pillow, in order to relax the psoas and iliacus muscles.

It is well to caution against a too protracted lying in bed, as it weakens the heart. Lisfranc had his patients lie in bed a year or longer, for uterine displacements, a practice now fortunately abandoned.

I have often observed the temperature—which was habitually 99° to 100° F. in patients tender from adhesive perimetritis—decline upon putting them to bed for a period of several days. When about to begin the treatment of cases of perimetritis it is well to observe the temperature carefully. The higher it ranges the greater the necessity for enforcing rest. Another valuable practical point to be obtained from thermometry is the length of time to confine the patient to the bed. If I am asked, how long ought we to have the patient remain in bed, I answer, till her temperature remains normal throughout the day, after she has again resumed her usual habits. The length of time necessary to accomplish this varies greatly. Some patients receive all the benefit possible for them to receive in two or three weeks, while others will not obtain a similar result in less than three or four months. A large number of successful treatments will average about one month to each patient, provided the other means of relieving the tenderness be used at the same time.

I have seen many patients recover rapidly who did not use rest, but who used the douches, packs or sitz baths, and blisters. They are the mildest cases known. The severe cases all require rest more or less complete.

Hot vaginal douches should be freely used, when borne well. I have now and then seen patients who could not bear

them without pain of a very severe degree afterwards. I have often observed that patients who could not tolerate douches, had one or both ovaries prolapsed. *Per contra*, I have much oftener observed that patients with prolapsed ovaries could not only bear douches, but were greatly benefited by them. When douches produce pain and fever, or hemorrhages, they are imperatively interdicted for a time. Their subsequent resumption will, after a time, be warranted, in nearly all cases, by no bad symptoms following them.

Hot water produces vascular tension, which is very soon followed by relaxation. To be satisfactorily effectual, douches should be repeated often enough to *maintain* vascular tension and to permit no relaxation to follow. Hence, they should be repeated every four or six hours—thus the patient can receive from three to five douches daily.

When patients do not remain in bed continuously, it is important to direct them to lie down, well covered, for at least an hour after each douche, to prevent taking cold.

The rapid disappearance of exudations under the use of hot douches is truly wonderful in many cases. I have often seen them disappear in three or four weeks.

The *method* of administering vaginal douches should always include one important point, viz: the impingement of the water against the vaginal vault. They should be administered so as to produce the least amount of fatigue and inconvenience. It is astonishing how awkward many women are in using them.

To use them, with the patient on her back with her hips slightly elevated, requires a reservoir with its outlet tube and vaginal nozzle, a bed pan with a side outlet for attaching a tube to convey the water to a pail on the floor. The alleged distension of the vagina and the immersion of the cervix in a

lakelet of hot water, while the patient receives the douche, lying on her back, is, in most instances, imaginary.

A very convenient method of administering the douche, is by placing the patient on two chairs, separated four or five inches, with her vulva between them, over a pail. The hot water, in a pail or pitcher, placed on a stand or stove, can be syphoned out without effort on the patient's part, conveyed to the vaginal vault, thence to the pail. This method can be easily and quickly carried out, and without the assistance of a second person, without wetting or removing the clothing. It is the simplest and easiest method of procedure, and for that reason will be the most likely to be faithfully carried out by the patient. A good substitute for the chairs is the modern water closet, which should be used only when the room is well warmed.

Sitting on the *pot du chambre* to receive vaginal douches, is often too productive of aching legs and compressed abdomen to be commended.

Administering the douches while the patient is in a sitz bath is recommended by many writers, without any very well demonstrated advantages to favor it.

The use of medicated waters for hot douches in chronic perimetritis is of doubtful value. The *heat* of these douches is the remedial agent. Its value, in the great majority of cases, is beyond all question.

Analgesics are sometimes necessary. Opium is the type of this class of remedies. Cannabis indica is also very effective. Baker Brown strongly urged the use of conium, as especially possessing power to control pelvic pains. Belladonna, per rectum, is much used, and when thus used its effect is often stronger than when used by the stomach, a point important to remember.

The Gross or Brown-Sequard neuralgia pill is often effective. I have used the piscidia erythrina several times without any satisfactory result. Chloral rarely disappoints us in controlling pains, but its objectionable features are serious. Of all analgesics, opium is the most reliable. The deodorized tincture is the least objectionable form in which to use it. Where an unpleasant cerebral idiosyncracy exists against opium, full doses of the bromide of potassium will almost always prove satisfactory in averting the opium's unpleasant action. The resort to opium should extend over as short a time as possible, for fear of inducing the opium habit. I believe that more patients with adhesive chronic perimetritis become opiophagists than the profession has any conception of.

Administered by the rectum, opium disturbs the digestion less than when it is given by the stomach. We must be mindful of the possibility of mechanically disturbing the parts involved in the inflammation by the use of clyster or a suppository, to the point of producing much pain subsequently,—an accident by no means uncommon.

Hot sitz baths and *pelvic packs* are of great service in decongesting the pelvic organs.

In very severe cases the sitz baths are administered with more discomfort to the patient than are the packs. The movements of the patient necessary to taking the baths are often productive of pains which it is desirable to avoid as much as possible. The patient should sit in the bath from 15 to 30 minutes, hot water being added every few minutes during that time. Now and then a patient is nauseated and made dizzy in the bath. When such effects are experienced the packs are to be preferred.

The packs are very simple, very easily used, and are nearly always so productive of relief from pains that the patient falls

asleep while enveloped in them. The bed being suitably protected from being wetted, by a rubber or oil cloth covered by a quilt and a sheet, the patient is placed thereon with her pelvis enveloped in a woolen blanket wrung out of hot water. A rubber sheet is folded around the blanket, and the patient is covered with bed clothes and allowed to remain one or two hours. Caution must be used in removing the patient from the pack, lest she take cold. They can be used advantageously daily once or twice till they cease to make the patient more comfortable.

Counter-irritation is often productive of wonderful relief from pain and tenderness. It can be applied in the way of permanent blisters, flying blisters, or setons.

Blisters, from three to five inches square, or cantharidal collodion, should be applied, alternately, to the vaginal regions. When cantharidal blisters are used, strangury can be best prevented by the free use of diluent drinks. In anemic patients they should be avoided. The patients who are unduly depressed by them should not be re-blistered. A blister can be made pyematous indefinitely by the use of savine ointment. Flying blisters are allowed to heal as soon as possible. The choice between permanent and flying blisters must be determined by the patient's general condition. Permanent blisters are a great drain on the physical resources of women. When well borne, they produce good results very rapidly. When not well borne, they induce a condition of anemia and nervous irritability, that is astonishing in many instances.

The discomfort of a blister is so great as to lead the majority of patients to inveigh against them at first, but several days later, when they have experienced the relief that they bring, they will often call for them.

A lesser degree of counter-irritation than blistering is accom-

plished by the use of croton oil or of iodine. Vesication, continuously maintained for weeks, by the former, is a very mild method. It is not very painful, and inconveniences the patient but little. Enough of the oil, diluted with an equal amount of glycerine or sweet oil, may be used every second, third or fourth day to accomplish the desired end of pustulating. Too severe pustulation, resulting in erysipelatous inflammation is to be deprecated. Occasionally we find patients who will absorb the oil, and its drastic action greatly enfeebles them.

Its effectiveness is so moderate as to leave more to be desired in many cases. Absorption of the exudate and relief from pain do not follow so conspicuously quickly as they follow the use of blisters, or even of iodine. The best that can be said of its use is, that it is not severe, and it does not lay up the patient.

The tincture of iodine should be used night and morning, painted over the lower part of the abdomen, between the *cresta ilii* from the navel to the pubis. Two or three coats of the iodine should be used at each sitting, till the surface is vesicated. Any further use of this agent is then unnecessary, till the tenderness is lessened somewhat, when it can be applied again in from four to fourteen days, till the part is made sore. Thus the continuous application of iodine can be maintained for several weeks with progressively following good results. The tenderness of the uterus on digital examination, and the various pains produced by the pressure of the exudate, gradually disappear as the latter is absorbed.

The supervention of symptoms of iodism imperatively calls for the temporary discontinuance of the use of iodine. It is perhaps as well to inform brunettes that the iodine paintings *may* have a permanent slight discoloration where thus used. I have actually had patients refuse to use it upon receiving this

information! I have often seen great nervous disturbance follow the paintings after several days, which must be regarded as indicating iodism. I have never seen the mammary atrophy produced which is sometimes accredited to this drug.

Occasionally patients are made restless, irritable and nervous by iodine beyond all explanation. Such women are generally among those who are greatly enfeebled by their sufferings, and the further use of iodine on them is wholly unjustifiable.

The length of time of using iodine should be limited only by its continuance to improve the patient's condition. I am in the habit of informing my patients, at the outset, that they must expect to use it *at least* three months as continuously as it can be borne. Its continuance for six months is a matter of common experience.

I desire to emphasize one point, especially, before leaving this part of the subject—and that is, the necessity of covering the whole lower part of the abdomen with this agent. Painting over a small space—*e. g.*, two or three square inches—will not do much good, and will produce nearly as much inconvenience. Unless we observe for ourselves the extent of the paintings we will very often be deceived by being led to believe that enough surface is covered, when, in reality, not one-fourth as much is painted over as we had ordered.

The seton is another method of producing effective counter-irritation. It is applicable to patients confined to the bed. Its great advantages are its certain derivative action, and the small space that it occupies. It can be inserted in either iliac region, an inch above Poupart's ligament.

A dozen small threads of silk can easily be passed, with a flat curved needle, through a fold of skin pinched up tightly. The pain is but a small matter. The skin should first be be-

numbed by ether spray. The severe inflammation sometimes produced by a seton can be allayed by poultices. The threads should be tied into a loop, to prevent their being pulled out, and then anointed with basilicon or resinous ointment. Every day or two they should be drawn through the opening so as to embed a fresh portion of the threads. In this way they can be drawn through, back and forth, and the suppuration maintained for weeks or months.

The patients should be informed that a scar will always remain after the seton's removal. The possibility of erysipelas and of exhaustion of the patient's vitality following the setons should be borne in mind.

In some apparently desperate cases the seton seems to be the only effective measure. Under its influence the pains gradually diminish, the reflex oppression to the digestive and nutritive functions is slowly lifted, and the gradual improvement is so pronounced that he who once uses setons is inclined to use them frequently.

The length of time of using them should be limited only by the continuance of progressive improvement.

I wish to add, in the way of a summary on this subject, that, of all measures to promote absorption, relieve tenderness, and diminish pains, I regard effective counter-irritation as the most valuable of any single measure. Substantial and most striking improvement follows its use more conspicuously than it follows any one measure.

(*f.*) Nearly all cases of chronic adhesive perimetritis with tenderness need corroborant treatment. Constipation is present in nearly all cases. Copræmia is produced by it, and we soon thereafter have fecal anemia. The impoverished blood leads to imperfect functioning of all the organs, notably of the alimentary tract, which, in turn, leads to mal-assimilation.

Thus the patient drifts into a vicious method of existing, in which the physician usually finds her.

The best corroborant measures for such cases are laxatives and tonics. A course of one or two months of these remedies will put the patients into a condition of nutritional vigor wherein we can hope to see the necessary absorption produced in the pelvic tissues which leads to recovery—a condition which is *absolutely indispensable* to speedy and certain recovery. Unless we can secure this improved condition of the patients' blood, efforts in the direction of cure will be in vain.

Every physician has his own selection of laxatives and tonics. Whatever he has skill in using to secure daily defecations and an increased appetite will be of most avail to him. Compound licorice powder, euonymin, aloes, cascara sagrado, compound colocynth extract with stramonium, the various laxative mineral waters, physostigmin in 1/8 grain doses three or four times daily, iridin, tamarindus, and many other agents can be used in such manner as to result in naught but advantage to the patient. I have used all of them at times. Some patients cannot take laxatives that others can very easily take. A lady whom I know takes a daily dose of .3 drops of the fluid extract of podophyllum with comfort and efficiency, while her sister has the most violent tormina after using a similar dose of the same drug. By trial one soon learns what will act satisfactorily with individual patients. When the daily dose is found, it can be used till the patient is cured. Proper attention to diet, with the constipated and costive habit in mind, should be given at the same time.

The bitter, mineral and stimulating tonics nearly always benefit. Cinchona, gentian, salix, the various mineral acids, and alcohol in one of its many forms, will be found of great utility in different women.

Cases treated in the manner described will surely be benefited. Some of them need a few of the measures described, while others need all of them. In mild cases, improvement results very speedily, while in others it comes reluctantly. The gynecologist who can learn to use remedial measures in such a manner as to continually improve the patient's strength and general nutrition, and at the same time to use whatever seems to be best adapted to each case to promote pelvic absorption without injuring the patient by too officious activity, will learn to temper his prognosis in new cases in a way that will be gratifying alike to himself and to his patient.

Occasionally cases of adhesive perimetritis will be seen wherein the patients are so reduced in strength, and suffer so much, that all that can be done for them is to make them comfortable with analgesics and packs, and to improve their nutrition till they can endure counter-irritation. Such cases are tedious in the extreme. If no inflammatory exacerbations occur, and nutrition can be successfully promoted, such cases will improve. Many times it takes six, twelve, and even twenty-four months to see any decided progress.

Additional to the foregoing, a course of Vichy water will be found beneficial in restoring to health, perimetritic patients who are lithemic or rheumatic. The granular effervescing salts of Vichy are the most convenient for using. The chemical reaction of the animal humors plays a most dominant part in nutrition. The functions of nutrition, respiration, and of vital selection, depend greatly on the chemical reaction of the animal fluids. Excessive gastric acidity, with sour or rancid eructations and regurgitations, tympanites, epigastric tenderness, and a bad taste in the mouth mornings, will be corrected by the use of Vichy salts. The life of enforced quietude led by the majority of these patients tends to the development

of lithiasis, which, when found, should determine us upon the use of Vichy water.

The abdominal bandage will be found of the greatest possible advantage, by way of affording gentle and firm support and a sense of comfort to the patient. One should be used that can be laced down the sides. It can be made to fit exactly, being made to order by measurement. I know of no supporting bandage so well adapted as the one known as the "Madame La Chapelle's Health Preserver," so extensively advertised in the current medical journals by a business firm in Boston. When adjusted to patients tender from perimetritis it affords instantaneous comfort, and enables them to move around with unwonted steadiness and certainty. Its good effect is only to steady the abdominal organs and prevent too great motion of them, by gentle and universal compression of the abdominal walls.

2nd. Treatment of Cases Comparatively Devoid of Tenderness.—The disappearance of the exudate is what we aim to accomplish. Patients not subjected to medical authority will often recover from perimetritis. Furthermore, it is an established fact that the better the general health, the sooner will the exudate be absorbed. In this way can we explain why, in some instances, without treatment, the immobility of the uterus is relieved in a few months, and why, in other patients, it persists for years.

The natural history of the disappearance of pelvic exudations furnishes a very interesting pathological study. One is most forcibly impressed with the difference found in examining patients in the acute stage, or immediately thereafter, with its complete uterine anchylosis and "deal board" hardness of the vaginal roof, and the comparative freedom of uterine move-

ment twelve or twenty-four months later—and this in cases not under medical treatment in the interval. I examined a patient this month, whom I first examined four years ago, when I found all the pelvic organs immovably fixed by an old gonorrhœal perimetritis, terminating in abscess, of four-and-a-half years previously. This month I find perfect and painless freedom of motion of all of the pelvic organs. In the meantime, in spite of repeated urgings to submit to treatment, she has had no treatment whatever, except what was necessary to preserve her alimentary functions in good order. She is a woman of an exceptionally vigorous and energetic nature, and yet, notwithstanding her uniformly good health, it has taken her eight years to recover without special treatment.

I have seen many cases wherein these changes have taken place in a few months—in from six to twenty-four months—without special treatment. I have never seen another one so long recovering as the one just mentioned.

In view of the fact that many cases recover spontaneously, it would seem that all that a physician can do is to hasten what nature does for these patients.

Attention is directed to the following means of treatment of perimetritis, additional to those already mentioned:

(*g.*) Local treatment.

(*h.*) Massage.

(*i.*) Postural treatment.

(*j.*) Pessaries.

(*g.*) Local applications to the cervix and vagina will be found of the greatest advantage when properly used. The "iodized phenol" (tincture of iodine one part, and carbolic acid, 95% solution, three parts), first recommended by Dr. Batty, of Rome, Ga., will be found adequate to all needs in this direction.

After the cervix and upper vagina are cleansed as much as possible, the entire mucous membrane visible through the speculum should be painted over thoroughly. Subsequently, a pledget of cotton saturated in the phenol is passed into the uterine cavity as far as it can be passed *without producing suffering*, and allowed to remain for 24 hours or less. It can be easily placed there by being loosely wound around an applicator and held there by the forceps as the applicator is withdrawn. A string attached to it permits its removal in 24 hours. The caution against its being thrust through a tender internal os cannot be too positively enjoined.

Painting the upper part of the vagina with the iod. phenol must be productive of good. It thus presents a surface additional to the cervix and enables us to extend the application of counter-irritation.

Iodized phenol is comparatively painless, because of the local anæsthetic action of carbolic acid. It thus possesses a great advantage over nitric acid and over silver nitrate.

The local action of iodine is most pronounced. If the iodide can promote absorption of exudations, surely iodine should be most energetically efficient in these cases. The gratifying part of it is, the pelvic exudations *do* disappear in most instances under iod. phenol.

In many instances the incipient toxic action of carbolic acid is most unpleasantly noticed in its producing vertigo. Such patients quickly taste the phenol—within five minutes of its use. I have never seen any dangerous manifestation of its poisoning.

After the application, a pledget of cotton should be used to prevent any escape of the liquid from the ostium vaginæ. Should it escape, it will blister the part that it traverses and much suffering upon walking and urinating will follow. I

once had a patient in bed four days from this cause, opiates internally and poultices externally to the greatly tumefied labia being necessitated. The cotton can be removed in an hour with safety.

After phenol applications—two or three days—a compact, cream-white slough of mucous membrane covering is removed by the douches. Its appearance indicates the thoroughness and efficacy of the application.

Local treatment seems to accomplish two ends—it promotes absorption, and thus diminishes the strength of the adhesions, and cures the inflammation of the uterus and diminishes its enlargement. Whether the absorption of the peri-uterine exudation leads to a cure of the uterine inflammation and enlargement or not, is perhaps an open question. I am inclined to believe that the disappearance of uterine fixity is necessary to curing inflammation and hypertrophy. One thing every gynecologist will acknowledge—viz.: that every uterus inflamed, with eroded cervical mucous membrane, fixed and enlarged, is freed from its anchylosis when it is restored to its normal condition as much as our art can restore it.

(*h.*) Massage is a method of treating a fixed uterus first regularly described by Norström in 1876. Its use in some patients is of the greatest possible advantage. Its misuse is productive of renewed inflammations, and thus becomes a source of danger. To distinguish between the two, and to avoid the accidents arising from the misuse of massage, requires much caution. If the rule to avoid carrying this treatment beyond the point of producing *endurable* or comfortable (!) pain be inflexibly followed, no harm will follow massage. If it be carried on to the extent of causing much pain, intending to abbreviate the duration of the treatment, we incur the risk of doing incalculable mischief.

Its chief benefit is to be seen in cases where the uterine immobility is not absolute. Where it is absolute, massage does no good whatever. It is when the uterus is partially movable *only* that massage can be of avail.

The idea of uterine massage may be comprehended in the assertion that its application and results are not unlike those of passive motion of a joint immobile from an old arthritis. Its progressiveness of application is warranted differently in different cases. Some patients will bear rapid progression in its use, while others must be treated with great slowness of progress. Daily use of it should be made when it can be borne. Enough irritation should be produced to promote absorption of the exudate, but *not* enough, to produce inflammation.

When used, the patient should be on her back with the knees drawn well up and the abdominal wall relaxed as much as possible. One or two fingers are introduced into the vagina and behind the cervix. The uterus is then to be freely moved in all directions, upwards, forwards, backwards and to either side, the position of the fingers being appropriately changed in order to effect the various movements. Usually it will be found that movement in some *one* direction is the most painful of all movements, and when it is found, it should be especially avoided. Frequently the only movement possible is produced by the vaginal tract, and when so found it should be repeated till it be possible to effect movement by bi-manual manipulation. The length of time required to reach the bi-manual movements varies infinitely. It can be reached in six or ten treatments in some cases, while in other instances it cannot be reached in less than three months under daily applications of massage.

The length of time necessary to effect the movements herein indicated is very brief—one to three minutes being a great

abundance of time at first. Later, as we see that uterine movement is becoming of wider range, it is, in many cases, surprising to see how rapidly progress is made, and how progressively the tenderness diminishes, apparently *pari passu* with the increase of uterine mobility. *Then* it is that longer treatments become rapidly effectual in enabling us to reach bi-manual manipulations.

The character of digital pressure when first applied should be described, perhaps. After reiterated cautions contained in this article, against any violence of application to the pelvic organs, it hardly seems necessary to enjoin the utmust caution as to first manipulations by way of the vagina. The pressure should be *gentle* in the extreme, till pain is produced, when it—pressure—should be so modified as to increase the pain to what may be called a bearable extent *only*, then it should cease. Gradually the extent of pressure can be increased till the fundus can be reached by the other hand.

The to-and-fro movement of the fingers through the ostium vaginæ, simulatory of a synusia, as is wrongly practiced by some persons, is wholly unnecessary. I have experienced a difficulty in inducing some patients who have been thus treated to again submit to the treatment, for reasons obvious to virtuous minds.

The first treatment is always one of considerable anxiety to me, because I never know how well or how badly the patient will bear it. In not a few instances I have had an acute inflammation alighted by massage—hence my anxiety over first treatments. It is a good plan to first treat the patients at home and to have them remain in bed for several hours, leaving an opiate and directions as to poulticing, should symptoms of an acute inflammation follow. In a brief time patients can receive treatment at the office of the physician, without incurring risk. After passing the first stage of treatment by massage—viz.:

the securing of some increased uterine mobility without creating inflammation—the next most desirable thing to secure is the ability to effectively practice bi-manual manipulation. When this is secured, the progress of the treatment will be very rapid. Not only will the exudate be made to disappear more rapidly, but uterine engorgement and menstrual disorders will disappear with the most gratifying rapidity. Patients eat and assimilate better, sleep better, the tone of their nervous system is raised greatly, many increase in flesh, acquire greater powers of endurance, and are quickly restored to health.

After bi-manual manipulation can be practiced, the same movements that were made at first are simply increased and exaggerated to the fullest extent. Naught more can be accomplished. It will almost invariably be the case that patients in whom great improvement in the uterine mobility is secured will declare that they are quite well long before the physician is inclined to stop the treatment.

(*i.*) Postural treatment—as first suggested by Dr. Campbell, of Augusta, Ga., I believe—consists in placing the pelvis higher than the chest, and then admitting air into the vagina. The most convenient way of securing this position is to place the patient on her knees and chest, the thighs being in the vertical position, and the chest and neck lying on the same level that the knees occupy. A hard bed will accommodate the patient in assuming this position. The pelvis being highest, it will be found upon retracting the fourchette a trifle that air is admitted into the vagina, and it becomes distended and elongated to its greatest capacity by the ascent (anatomically) of the uterus towards the diaphragm. The uterine movement is made by the traction on it of the abdominal organs through their peritoneal connections. Ordinarily, the physician will experience difficulty in even *reaching* the cervix while the

patient is thus postured. The uterine movement, upon admitting air into the vagina, is instantaneous, and is generally accompanied by a sort of air inspiratory sound. The patient can easily assume the position, and, with one finger hooked over the fourchette, retreat it toward the cervix till air is admitted. The movement can be accomplished in five to ten seconds, easily. Immediately afterwards the patient should remain in the genu-pectoral position as long as she can comfortably; afterwards she should remain on the bed without assuming, in the meantime, the horizontal position for an instant.

The postural treatment two or three times daily, aids the other remedial measures wonderfully in some cases. Patients often tell me that the pelvic pains are decreased after this movement. In a few instances the sudden upward movement of the uterus is productive of a sickening pain, for a few seconds, when it passes away. This pain gradually diminishes as the treatment is persisted in. In one instance I found it so severe that the patient could not at that time continue the treatment. After blistering the abdomen and cervix, and hot douches for a few weeks, she was able to renew the attempt at postural treatment and to continue it till complete uterine mobility and a return of her general health followed.

One advantage of this treatment ought to be mentioned, perhaps, although it is obvious—and that is, the effect of replacing pelvic organs that are displaced, as the ovaries, tubes, and fundus uteri. A case comes to mind of a young woman, with partial prolapse of the left ovary, with perimetritic adhesions, who suffered intolerably from headaches. After eliminating all other causes of the headaches, it was decided that the displaced ovary was the organ at fault, and a pessary prescribed. She stoutly refused to allow the use of the instru-

ment, and the difficulty was finally compromised by her accepting the postural treatment in lieu of a support. Almost from the first day of the treatment her headaches decreased, and finally disappeared permanently. The elongation of the perimetritic adhesions and their disappearance by absorption, enough at least to relieve the ovarian irritation, is doubtless what followed the postural treatment.

(*j.*) Pessaries and supports have been discussed so much that I speak of them with the utmost reluctance. Many physicians of large gynecological experience use them very often, while other physicians of equally large experience rarely use them.

I wish to dispose of this portion of the subject in as few words as possible. I have but one rule that governs me in using pessaries, and that is, to adjust them as accurately to the displacement as possible and allow them to remain, *provided they make the patients more comfortable than they were without them.* If their effect is negative, or if they produce *any suffering*, I remove them at once. When I say that I "adjust them as accurately to the displacement as possible," the whole ground of pessary adjustment is included. It is on their adjustment that so much discussion and disagreement have arisen about pessaries. Adapting a pessary satisfactorily, presupposes, on the part of the physician, a complete knowledge of the position of the uterus, of the support upon which the pessary is to rest, of the changes that the pelvic organs undergo when the patient changes her position from the horizontal to the vertical positions, and of the allowances to be made for these changes.

When the perimetritic adhesions are so extensive as to produce complete uterine anchylosis, pessaries are of no benefit whatever. It is in cases of partial anchylosis only that they

are of advantage. When bearable, they act advantageously by favoring the elongating of the adhesions, and in this way allow more freedom of action of the pelvic organs. It will very often be found that pessaries of gradually increasing length of the longer axis can be successively used as the adhesions become more and more elongated.

Dr. Bozeman introduced a method of elongating pelvic adhesions, which is so simple and so efficient that it ought to be more widely known. It consists of "columning the vagina" with cotton supports while the patient is in the genu-pectoral position. The cotton support rests against the pubic arch and the perineum. It is allowed to remain thirty-six hours, and is then removed by the patient and douches are used. In twelve hours the "columning" is renewed, till the uterus is raised to its normal level. He says that in this way he can raise the uterus two to three and one-half inches, and afterwards the ovary is restored to its normal position, and a Hodge pessary can be easily worn. It should be added that during this "columning" treatment, other means, as iodine and hot water, should be properly used.

I can speak commendably of Dr. Bozeman's method of treatment with the greatest emphasis. Cases of uterine prolapse (partial) with incomplete anchylosis can, in nearly all instances, be improved with this treatment.

Among other agents remedial of chronic perimetritis, pregnancy may be enumerated with much showing in its favor. Where it can be secured, and we can feel assured that its complete consummation can be had, it should emphatically be seriously considered in the married woman.

It is, without doubt, in cases of moderate perimetritis acquired in girlhood (after puberty) where we see so very many women who tell us that they were always "sickly" till after

their first confinement, that we find pregnancy has cured the evils resulting from chronic adhesive perimetritis.

CONCLUSIONS.—(*a.*) The changes in the uterine circulation are of the gravest importance. The more I see and treat cases of perimetritis, the more I am convinced that gynecologists will, sooner or later, accept the following deduction as the truth regarding the vast majority of cases of uterine inflammations:

In the vast majority of cases, perimetritic adhesions, compressing the broad ligaments, retard the venous flow of blood from the uterus, and thus cause uterine congestions, which sooner or later, terminate in inflammations, of varying degrees of intensity.

Virgins, who enjoy perfect uterine health up to a certain menstruation, where the common cause of suppression, partial or complete—viz., a cold—is in operation, will in very many instances suffer subsequently at every menstruation. In some cases, naught beyond a slight, colorless leucorrhœa will be seen for periods, varying from one or two up to all subsequent menstruations. In many, naught beyond a slight leucorrhœa will be noticed just preceding and succeeding the flow. Still others will experience pains with the menses never before known. In still others, the more serious symptoms will supervene in due course of time, *pari passu* with the progressive increase of the inflammatory developments in the uterus. Duncan expresses the opinion that, next to endocervicitis, perimetritis is the most frequent of all gynecological disorders. I would suggest that the majority of cases of endocervicitis have perimetritis as their causation. Exactly why the mucous membrane of the cervical canal should take on an inflammation in virgins, without an antecedent cause, is a very difficult thing to explain. *Without exception, every single case of endocervicitis that I have seen in the past few years, has had in its*

anamnesis a menstrual period wherein the flow has been checked partially or wholly, after which the patient was never quite so well. From that period the symptoms have developed with varying degrees of intensity and rapidity up to the time of medical advice being sought. M. Bernutz, in his remarkable monograph on pelvic peritonitis, nearly thirty years ago, expressed the conviction "That the future knowledge of uterine pathology is as certainly subordinate to an acquaintance with this affection (perimetritis) as pulmonary pathology has been to a complete knowledge of inflammation of the thoracic serous membrane." That later gynecologists seem not to attach more importance to this subject than their writings indicate, is to me a source of profound astonishment.

(*b.*) The large majority of uterine and ovarian displacements will be found complicated with adhesive perimetritis. Every gynecologist recalls the readiness with which the luxated and flexed uterus returns to its displacement after artificial reposition. He also recalls how many cases he finds wherein reposition is totally unjustifiable, because of the violence necessary thereto being liable to light up a new perimetritis or cellulitis.

The presence of extensive perimetritic adhesions, with their resultant uterine anchylosis, comparative amenorrhœa and sterility, will lead the thoughtful gynecologist to abandon the exceedingly common, routine practice of limiting his treatment to cervical applications through the speculum, and to institute every possible means of promoting absorption of the offending exudate. His practice will be wholly inadequate without it. The very many cases of failure to relieve uterine inflammations undoubtedly have, in a great majority of them, an adhesive perimetritis propagating the inflammatory condition persistently and indefinitely, and, thus, because un-

relieved, remain the same after as before the institution of treatment.

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1634 MICHIGAN AVENUE.

ARTICLE III.

LIFE INSURANCE AND THE MEDICAL PROFESSION. *By* I. N. DANFORTH.

[*Read before the Mississippi Valley Medical Society, Sept.* 26, 1884.]

The relations existing between the business of life insurance and the medical profession are, and must continue to be, most intimate. Not a risk can be safely taken until its vital probabilities have been investigated by a duly qualified physician; not a loss can be paid until the cause or causes of death have been certified by the attending physician. Indeed, I do but state a well-worn fact, when I say that the perpetuity of any life insurance company depends very largely upon the ability and integrity of its medical examiners. The ubiquitous "life insurance solicitor," however agile and persuasive he may be, is helpless in the way of achieving practical results, until his work has received the approval of the medical examiner.

The statistics upon which modern life insurance is based, are the outcome of data furnished by medical men, and the more recent trustworthy and accurate statistical tables have been constructed by physicians. Again, life insurance companies depend upon the medical profession of our day for protection against the ravages of what were formerly uncontrolled epidemics. The companies do this, perhaps, with a sort of thoughtless unconsciousness, and always, so far as I have observed, without anything like a generous acknowledgement of their obligations to our profession; but the fact is no less patent, and the obligations are no less deep. In these days o modern travel, when civilized nations are becoming more and more migratory every year, and epidemic influences are, therefore, becoming more generally diffused, life insurance companies could not conduct their business with anything like

safety or certainty but for the safeguards which sanitary science, as developed by intelligent physicians, throws around them. It must be remembered that the dangers from the most deadly epidemic diseases have increased incalculably since the introduction of steam as a locomotive agent. All peoples of all nations travel incessantly; merchandise from all parts of the globe, and from all centers of infection, is constantly pouring upon our shores. Yet, how little thought do life insurance authorities give to epidemic diseases as a specially dangerous factor as regards their business: simply because they trust, with a confidence that has been verified over and over again, to the protecting influences of modern sanitary science, which medical men have laboriously developed.

Again, we are in the midst of one of those cycles of discovery which have characterized the profession of medicine from its earliest history. I allude to the "germ theory of disease," which now occupies so prominent a place in the minds of medical men. What the practical outcome of the theories—or, it may be, discoveries—of Pasteur, Koch, and others, will be, no man can yet prophesy with anything like certainty; but if a larger experience shall demonstrate their truthfulness, the effect upon the duration of human life must be very considerable.

Now, all future experiments which shall be conducted with the view of demonstrating the verity or falsity of the germ theories, must be conducted by medical men, experienced in such investigations. The results may be of vast importance in their practical relations to longevity, to preventible causes of disease, or even to the extermination of diseases which are now the terror of the magnates at the "home office." But these latter gentlemen are perfectly helpless themselves as to all such studies. A whole score of presidents, secretaries, directors,

actuaries, and general managers would be put to rout by a single "microbe." As between a lively bacterium and a "successful" solicitor, it would be about an even thing.

Now, this plain, simple statement of facts, shows that the business of life insurance casts upon the medical profession a very weighty responsibility—a responsibility, I may add, which, while it came unsought, has come to stay and must be met accordingly. And the time will come when the life insurance world will recognize in a more adequate and audible manner, the vast benefit it has received from the silent and unrequited labors of the great modern medical investigators.

But the medical profession sustains a still nearer relation to life insurance, in the person of the medical examiner—*by far the most important officer on the roster of the company.* In almost any life insurance office, this last statement would be received with derision and contempt. I can myself picture two or three presidents and twice as many secretaries who would shudder at the claim I make concerning the importance of the medical examiner; but this audience of thoughtful physicians will not only recognize but heartily endorse the truth of what I have stated. A life insurance company can get along very comfortably for a time without a president or secretary; or if either of these functionaries vacate their offices, they can be filled at once and worthily; but no company can do business for a single day without its corps of efficient medical examiners, and the loss of an old and the appointment of a new examiner is always regarded at the central office as a grave and important matter.

I propose to consider briefly the duties of the medical examiner, first to the company under whose commission he acts, and, secondly, to the applicant for the benefits of life insurance.

First: Duties and obligations to the company. The medical

examiner should, from the first, regard himself as an officer of the company, and not a mere wage-worker or employé. His position is therefore independent and dignified, and not at all subject to the mere whim or caprice of the local agent. From this standpoint of independent and individual responsibility—and this standpoint alone—should the examiner estimate the extent and importance of his duties to the company. The company has a right to expect and demand, first, that the examiner shall recommend sound lives only. A life insurance company is not a hospital or an eleemosynary institution; insuring men is not a work of charity; it is a matter of strict, stern business. A life insurance company *must* "make money" or die, and there is no halting-place between these two alternatives. The examiner ought to keep this fact in mind, namely, that he is not engaged in a work of charity, but that he is simply "doing business" on strictly business principles. The question as to insuring any individual life is simply this, "Will it pay?" "As a business transaction is it safe and desirable?" Hence, the company has a right to expect and demand that each and every examination shall be carefully and thoroughly made; that all sentimentalism and friendship shall be sunk out of sight, and that the investigation shall be coldly judicial, severely searching, and impartially just. It is frequently the case that a single examination is not sufficient to determine certainly the character of a risk: a common catarrhal cold may exist to-day which will be quite well next week; the pulse may be unduly excited by the novelty of the examination; the applicant may have been exposed to some communicable disease, whereof the incubative period has not yet passed;—these and many other causes may render a second examination necessary, if justice is to be done in the premises. In all such cases, the examiner should patiently repeat his work, recogniz-

ing the fact that important interests are at stake which his dictum must settle.

Again, there is a class of risks which ought neither to be recommended or rejected; but they ought to be "laid over" for future consideration. As examples, I may mention applicants who have recently recovered from acute diseases which are likely to leave or to cause local lesions, as rheumatism, gout, and pneumonia; applicants who are exhausted by overwork, physical or mental, but who are likely to have easier times in the near future; applicants who are suddenly seized with a passion for loading themselves with life insurance; applicants who are in the midst of heated political campaigns and their accruing dangers; applicants who have recently been reclaimed from intemperance and other forms of vice;—such applicants ought to be suspended for an indefinite term, until their probable permanent status can be more certainly known. Practical experience will enlarge this latter list considerably. It is the almost daily experience of a busy examiner that some applicant has to be "laid over" until some occult point in his personal or family history can be explained satisfactorily. It must be remembered by the examiner that, although he is investigating the *present* condition of the applicant, it is with reference to what the *future* is likely to develop. It is a matter of little concern to the company what the sanitary status of the insuree is to-day, compared with what his status will be in five or ten years hence. The function of the examiner is prophetic; he is required definitely to express his opinion as to what the future sanitary condition of each applicant is likely to be; and this opinion must be based not alone upon the bald statement of facts elicited by the general interrogatories propounded in the application, but upon the harmonious correlation of these facts with each other, as well as with any collateral facts

which may develop themselves, even though they be not embraced in the application. The examiner is, therefore, warranted in seeking information concerning the insuree from any and every source, and he is by no means limited to the list of interrogatories submitted by the company, tortuous and formidable as they have recently come to be.

In the next place, the company has the right, not to demand, indeed, but to expect that sort of aid from the examiner which is covered by the word "influence." Regarding every medical examiner, two things are to be taken for granted: First, that he is a thorough believer in life insurance, not only theoretically but practically. I hold that no physician ought to accept a commision as examiner for life insurance until he has "examined" the thing itself, and become convinced, not only of its utility and beneficence, but of its necessity; and, furthermore, that no man ought to be an officer in an institution in which he has not some pecuniary interest himself. Secondly, that no physician will accept a commission as examiner for a company whose standing and condition he has not first investigated with satisfactory results. These two conditions being fulfilled, it is not too much to expect that the examiner shall cast his influence in favor of life insurance in general, and of his own company in particular. Not that he is to sacrifice the dignities of his profession, and turn insurance solicitor; not that he is to divide his time between visiting his patients and "drumming up risks;" nothing could be worse than that. But it is frequently the case that a few quiet words will confirm a doubtful applicant, or turn the thought of a careless spendthrift towards a policy of insurance. And this is a service which is not only legitimate as regards the company, but beneficial and laudable as regards the citizen; and, moreover, it is in no sense derogatory to the professional dignity of

the wisest and most learned physician. I recall with pleasure many instances in which I have been instrumental in inducing poor men with families to procure policies of life insurance; knowing, as I do, that thus some provision has been made for those who might otherwise be left in needy helplessness.

In this connection it ought to be said that no examiner should, under any circumstances, allow himself to have any pecuniary interest in the acceptance of a risk. It is sometimes the case that agents—thoughtlessly or otherwise—propose to "divide commissions" with the examiner, especially if the latter has exerted any influence in the case. This is a very dangerous practice; it is justly as well as generally condemned by the company, and should be frowned upon by every medical examiner. Practically it amounts to offering a bribe to the examiner for passing a given risk. Some years ago, I was sent to a little town in interior Illinois to investigate a case which looked somewhat "crooked" upon its face. An insured party—a man about thirty—died of consumption some six weeks after his examination. Upon investigating the case, I found the following facts: the deceased had been a confirmed consumptive for more than two years, and had been treated for this disease by the very man who examined him for life insurance; half a dozen other equally doubtful risks were found, still alive, indeed, but manifesting signs and symptoms which would send the cold chills over the home office; and all these risks had been examined and recommended by this same examiner, and upon his recommendation polices were issued. What was the explanation? Simply this: the local agent and the examiner had "pooled their issues" in the life insurance business; that is, they had agreed to "work" life insurance together, and divide equally the commissions and examination fees, and the result was what might have been expected, as a

matter of course. The examiner should in no manner and in no degree compromise his perfect independence of all local influences or dictation.

In the second place, let us look for a few moments at the duties and obligations of the examiner to the applicants for insurance.

Applicants for life insurance have certain *rights* which belong to them, and which cannot be taken from them without injustice; and it happens that they are dependent upon the medical examiners for protection and fair treatment. An applicant ought never to be rejected, except for good and sufficient reasons. It works an injury which is lasting. It practically disbars the injured party from the benefits of life insurance; for a rejection is the mark of a burning iron which is indelible in the eyes of the insurance world. It goes on record at the home office; it becomes the common property of all the companies; and thus it becomes a part of the written history of a man's life. Now, life insurance is every man's privilege, until he is clearly proved to be ineligible; it is a privilege of inestimable value, and one which should not be lightly abridged or destroyed. "In doubtful cases," the company's instructions generally read, "give the company the benefit of the doubt and reject," or words to that effect. This is all very well and very proper; but let the "doubt" be clearly established. Some point in the family history, which the applicant cannot explain without seeking information elsewhere, or the presence of a simple catarrhal cold, or some other trivial and probably transitory objection, ought not to be converted off hand into a "doubt," and therefore a rejection. Let justice be done; let the applicant be given an opportunity to explain his family history, or otherwise "argue his case;" let the bronchial irritation have a few days of grace; let the final

decision be postponed a little, and it is not unlikely that a good risk may be saved to the company, and an act of injustice to the applicant be avoided. Some companies require the examiner to classify the subjects he examines, according to their degree of excellence, into first, second and third-class risks. More than fifteen years ago, in reviewing the first edition of my friend Professor Allen's work, on "Medical Examinations for Life Insurance," I expressed my disapproval of this plan in unqualified terms, and subsequent experience and observation has but strengthened my opinion. In the first place, there can be no fixed standard of human physical perfection, and therefore no absolute standard of comparison. Hence, not even the medical director himself can erect a fixed standard of excellence or faultlessness for his subordinates to study as their guide; hence, also, there must in practice be as many standards as there are medical examiners; in other words, every examiner must judge for himself. A very timid and conservative examiner would be likely to commit errors on the side of an extreme conservatism, while a bold and aggressive examiner would commit quite as many errors in the opposite direction. The practical result at the home office would be simply confusion, with corresponding perplexity to the medical director.

But where this system is adopted by the home office it must be followed by examiners. The question then comes up, what is a first-class risk? Of course, if only faultlessly perfect subjects are first-class, they must be few and far between, since it is almost impossible to find a person of adult years who is physically perfect. Again, if anything less than sanitary perfection can be accepted as first-class, at what point shall the line be drawn?—or where shall first-class end and second-class begin? It is evident that no absolute rule can be established,

but that each man must in practice erect his own standard, and judge for himself. In my own practice, I am accustomed to rating as first-class all applicants who convince me, upon good and substantial grounds, that they are likely to "live out" their expectatation, and I think this rule is just and fair as regards both applicants and companies.

The medical examiner frequently becomes possessed of information concerning applicants which is confidential in its nature. I need hardly add that all such revelations should be as jealously guarded as though they were made by a patient at a regular consultation. The insuree has the right to demand this, and the law would, without doubt, protect him in that right.

In conclusion, let us consider for a moment the subject of the medical examiner's fees. They are, of course, ridiculously small. Most of the companies pay a uniform fee of three dollars; perhaps half a dozen pay five dollars, while a considerably larger number pay but two dollars. I sometimes hear of the "injustice" of the companies in paying such trivial remuneration for so responsible a service; but I do not so regard it. It is not the business of the companies to crowd larger fees upon us; it is our business to demand them, and that is just what we are not likely to do. Physicians, as a body, are somewhat remarkable for their lack of business acumen, and for their utter want of cohesive force. Whichever way the physician turns, he is victimized by rings and trades-unions; the butcher, the grocer, the plumber, the carpenter, and every other tradesman and artizan is bound and protected by the laws of his guild. But the physician not only fights the trades-unions single-handed, but he also enters into a lively competition with his brother across the way. Now, insurance managers know all this; and so long as we con-

tinue to drug the market with medical men to whom time is a burden, and especially so long as we continue to manifest an utter want of union among ourselves, the companies will fix the price to suit themselves; and nobody can blame them.

But the question of a "more perfect union" among physicians—a union which shall adjudicate not only upon matters of ethics, but upon our material and financial interests as well, is one which ought to engage our thoughtful attention.

ARTICLE IV.

CASE OF URIC ACID CALCULUS, WHICH APPEARED TO HAVE BEEN DISSOLVED IN THE PELVIS OF THE LEFT KIDNEY, BY ALKALINE REMEDIES.

By HARLAN N. ORTON, M. D., *Minneapolis, Minn.*

Having arrived at your diagnosis in cases of calculi in the kidney, and having determined in your own mind that a stone exists, the question arises, What course are you to pursue?

The best authorities assert that "the medical treatment in these cases is unsatisfactory, and can at the best be only palliative." Now, as I do not belong to the so-called "school of medical skepticism," I have come to the conclusion from the result obtained in a case (the history of which I am about to relate) that it would be just as well to first try what remedies will accomplish before we resort to the knife.

Case.—James G., age 45 years; large, fleshy man, of a gouty diathesis. I was called to see him first, August 2d, in the morning; found him suffering from a severe attack of nephritic colic; said he had the first attack of this kind while in the Union army, about 1862, and a recurrence of the same trouble on an average of about once in six months ever since, passing a small calculus at each time, one of which he had saved and I took possession of. I concluded, from the history he gave me of previous attacks, that this one would pass off about the same, so prescribed Dover's powder and applications of hot cloths to relieve pain, etc. Called again in the evening; found him resting quite easy; said the paroxysms of pain would come on about every two or three hours and last for half an hour, when it seemed as if the stone would work back into the pelvis of the kidney, and then he would have relief for a while.

August 3d (morning), condition about the same, except the pain would be a little more severe at times.

I quote his own words, "Doctor, I am in for it this time. That stone is too large to ever pass down into the bladder, unless you can give me some medicine to dissolve off part of it in the kidney."

The question came to my mind, Is a doctor justified in folding his arms and waiting, in such a case as this, in hopes that the calculus might become encysted? I think not, any how not until he has tried the solvent properties of the different remedies.

I analyzed the calculus that he had passed in one of his previous attacks, and found it to be composed of uric acid principally, and I had good reason to suppose that the one in his kidney at this time was of the same composition. The urine gave a marked acid reaction.

After a consultation with a medical friend of mine, we concluded to put the patient on alkaline remedies—potassii acetas, gr. X, lithii carbonas, gr. iij, every hour, largely diluted with distilled water. In about twenty-four hours after commencement of this treatment, he began to pass "*red gravel*" with his urine; soon after he experienced instant relief from all pain—said he could feel the stone drop into the bladder. At 5 P. M. same day (August 4th), passed a calculus with his urine, one-half inch long by one-quarter inch in diameter, composed of uric acid, quite soft—would almost crumble between the fingers while handling it. The concretions that he passed altogether would about fill a tablespoon. His urine soon cleared up, and he has had no trouble since. The result I obtained in this case is certainly in favor of this method of treatment.

EDITORIAL.

AS TO THE VALUE TO PHYSICIANS OF THE SUMMER VACATION.

During the late absence from this city, of the senior editor of this journal, an anonymous article, for which he was not responsible, appeared in these columns. It was entitled, "The Samuel D. Gross Professorship of Pathological Anatomy," and contained some pointed reflections upon the position assumed on this same subject by the editor of the New York *Medical Record.*

Under date of September 20th, the *Medical Record* responds with certain editorial comments, apparently written in a retaliatory spirit, which we are charitable enough to hope were inspired when the editor of that esteemed cotemporary also was absent for the heated term from the city of New York.

There is such an obviously absurd side to this situation that it need scarcely be pointed out. We of course, offer our explanation to our editorial brother of the adjectives of which he complains, offensive to the spirit of courtesy which should characterize all discussions however remotely associated with scientific themes.

We are even charitable enough to accept in advance, with the utmost good nature, the expression of regret which our friend of *The Record* is certain to offer.

The lesson to be learned from this affair, is really deeper than that suggested by the writer on the staff of *The Record.* It seems to have occurred to him that the parties at either end of the line were composing mid-summer editorials with the atmospheric temperature at or near the nineties. He could think of nothing so valuable for his adversary as a packing in ice. Yet we all know that the temperatures thus artificially induced are apt to be followed by the exaggerated hyperæmias of a restored and active circulation.

We recommend rather to such fiery spirits, the rest and recreation of a vacation in the summer season. It is better at these times, for our Eastern friends to cultivate an acquaintance with the sea-shore; and for others the glades and lakes of our Western Wisconsin.

Returned from these peaceful associations, young gentlemen, ye may well ask yourselves whether it is either a pleasant or a profitable commerce to exchange disagreeable adjectives between Chicago and New York.

A Case of Fatal Chloroform Narcosis.

We desire to record the following interesting case of fatal chloroform narcosis:

On Wednesday, August sixth, three o'clock P. M., a laboring man, twenty-eight years old, presented himself at the office of Dr. D. A. K. Steele, southeast corner of State and Eighteenth streets, to have a recent wound dressed. The middle and ring fingers of the right hand had been mangled and partially torn off by machinery in a planing-mill. Dr. Steele advised amputation through the second phalanges. As the patient was suffering from pain and shock, and was excessively nervous, it was determined to administer an anæsthetic. Dr. C. C. Beery

was requested to administer Squibb's chloroform. The man was lying flat on his back on an operating table, within three feet of an open window. The anæsthetic was exhibited by means of a loosely folded napkin, and the tension of the vapor was lowered by free admixture of air. At the expiration of ten or twelve minutes, anæsthesia was complete. Between two and one-half and three drachms of chloroform were administered. The stage of excitement was marked, and the patient struggled violently; the pulse was rapid and compressible. When unconsciousness was fully established, Dr. Steele picked up the hand to begin the operation. Suddenly a long, stertorous respiration was heard, the heart ceased to beat, the man became pallid, and breathing stopped. The pallor yielded to a dark, venous congestion, which gradually faded away.

Vigorous efforts at resuscitation were at once instituted. The tongue was drawn forwards by a pair of Volsella forceps, and artificial respiration attempted. The heart muscle was directly irritated by a fine aspirating needle. All efforts were of no avail. Death had resulted from cardiac paralysis.

The autopsy, forty-eight hours later, revealed the brain slightly congested; lungs markedly congested, and slightly œdematous; heart of normal size, with large deposit of fat upon and around the auricles, fatty infiltration of muscular fibers, wall thin and pale, valves very thin and elongated, atheromatous degeneration of coronary arteries and aorta; aorta slightly contracted; kidneys, liver and spleen congested; abdominal cavity contained about three ounces of bloody serum; the small intestines were hyperæmic.

The man presented a preternaturally old appearance, seeming at least ten years older than he really was. An examination of the heart, prior to the administration of the chloroform, revealed no evidence of organic disease. The heart was simply

acting rapidly and feebly. No history of previous condition, with reference to rheumatism, drunkenness or other predisposing cause, was elicited. Of course the coroner's verdict attached no blame to the physicians.

Dr. Steele deserves, and will receive, the cordial sympathy of the profession.

Ether is the universally recognized anæsthetic in the United States, but there are many conditions which contra-indicate its use. The so-called "English mixture" of one hundred parts chloroform, thirty parts sulphuric ether, and thirty parts absolute alcohol, has won a well-deserved reputation in the United Kingdom and Continental Europe as a safer anæsthetic than pure chloroform. The "English mixture" is, nevertheless, dangerous, and demands care and experience in exhibition. Four deaths, undoubtedly due to this agent, have been reported within the recent past, from Billroth's Clinic.

BOOK REVIEWS.

DISEASES OF THE HEART AND THORACIC AORTA. *By* BYRON BRAMWELL, M.D., F.R.C.P. *Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; Pathologist to the Edinburgh Royal Infirmary; Additional Examiner in Clinical Medicine in the University of Edinburgh. Late Physician and Pathologist to the Newcastle-on-Tyne Infirmary; Formerly Medical Officer to the Tynemouth Union Workhouse Hospital, The Prudhoe Memorial Convalescent Home, The Tyne Floating Hospital, Etc., Etc. With six illustrations. New York:* D. APPLETON & CO., *Bond Street. 1884.*

This work, with its neat binding, exceptionally good print, its numerous beautiful illustrations, is very attractive, and in its comparative freedom from typographical errors forms a pleasing contrast to the publications of another New York house, whose well-known name ought to be a guarantee of good work. Although we noted but four errors of the compositor, two of them are grave and ought not to have escaped the eye of the proof-reader. There are several other errors which would appear to have existed in the author's manuscript, and are not inexcusable. On page 69, in speaking of Cheyne-Stokes respiration, he says: * * * "It only occurs

in advanced cases of cardiac disease." As he elsewhere speaks of its occurrence in other, such as cerebral affections, his meaning here evidently is that it occurs only in advanced cases of cardiac disease. Again, in the note on page 137, he states: "The para-sternal line is an imaginary line drawn vertically downwards over the front of the chest, midway between the left border of the sternum and the left nipple." This displays not only that laxity of expression, which runs through the entire work, but exemplifies as well prolixity and tautology. The sentence quoted should read: The left para-sternal line is an imaginary one drawn vertically midway between the left border of the sternum and the left nipple. On page 157, in discussing the reduplication of the first heart-sound, he says: "In order that the first sound may be perceptibly reduplicated—*i. e.*, that the mitral and tricuspid first sounds may be separated by a perceptible interval—it is necessary to have a considerable degree of asynchronism between the closure and tension of the aortic and pulmonary valve flaps—a more considerable asynchronism than is required to produce perceptible doubling of the second sound." The valves concerned in the production of the first sound are the mitral and tricuspid, not the semilunar; hence the words "aortic and pulmonary" should be replaced by *mitral* and *tricuspid*. In a note on page 203 occur the words, "an abnormal accentuation of blood behind the mitral orifice." The word "accentuation" has here been inadvertently substituted for accumulation. Yet it is perhaps more likely that this is the fault of the compositor than of the author. On page 397, the expression "liquid ammoniæ" is used in place of liquor ammoniæ or liquid ammonia. The author's prolixity and tautology, to which we have alluded, are so flagrant throughout as to become painfully wearisome. In consequence, our

enjoyment of the work was destroyed, and its perusal grew to be a tiresome task. If carefully revised and pruned, the book might be curtailed a fourth, we presume, and rendered far more readable. The author states, in his preface, that the context has been taken almost unchanged from his lectures—which may account for many of the repetitions. The reiteration of *heads* and various "steps" is well enough when students are taking notes of a lecture, but it mars the symmetry and enjoyment of a work that is meant to be classical.

We regret, also, to observe certain expressions which, although employed quite generally by English medical writers, seem to us objectionable. We refer to such as the following, on page 319: "The left apex-beat." What is the "left apex-beat" if it is not the apex-beat? We do not recognize a right apex-beat. However, passing from faults of style to that most important part, the subject-matter of the book, we have much to commend and some things to deplore. Chapters one and two (which are introductory) are excellent, and will elucidate many points that are so often obscure to the student of medicine. The discussion of Cheyne-Stokes respiration is good, and the author's attempt to explain the phenomena as due to "irritable weakness" of the respiratory center (page 74) is not only original, but has much to recommend it to thoughtful consideration as meeting the needs of the case as fully as those of Traube, Sansom, or Filehne. The discussion of the several theories advanced in explanation of the systolic murmur heard in the pulmonary area in many cases of anæmia, is also highly instructive and interesting. Throughout the work the pathology of the various diseases discussed, is excellent and not so detailed as to weary the student and ultimately render his ideas on the subject misty. In general, the affections treated are handled well and clearly

but, like most English writers on diseases of the heart and vascular system, he is inclined, we think, to include too many doubtful facts in the etiology and to assert them dogmatically. Thus, on page 373, he states: "In fact, it would appear that anæmia is a predisposing cause of acute rheumatism." He is also inclined to the opinion (page 569) that "cirrhosis of the kidney and cirrhosis, or fibroid degeneration of the heart, are both due to chronic alcoholism." He often speaks of syphilis as producing acute endocarditis, and, on page 692, he enumerates "strain (more especially frequently-repeated and sudden increases of the blood pressure), syphilis, alcoholic excesses, gout, rheumatism, exposure to cold and depressing influences of all kinds," as the "great causes" of chronic endarteritis. German pathologists express themselves much more guardedly on these points, because not regarding them as substantiated, and we think their position more scientific. It is of immense satisfaction to be able to trace the cause of a given affection so explicitly, but it seems to us somewhat hasty.

In his remarks on pericarditis with effusion, the author certainly conveys the impression that the friction sounds obtain undiminished and unaltered even in the height of the effusion. Friction sounds are undoubtedly audible in many cases with considerable liquid in the pericardium, but it is likewise true that many times they disappear with the distension of the sac; and where they remain, their intensity and location is very apt to change. We are glad to have him, on pages 319–320, call attention to the anatomical fact (as stated by Duchek) of great clinical significance, that the triangular shape of the area of cardiac dullness in pronounced pericardial effusion, without pleuritic adhesion, is due to the retraction of the borders of the lungs, rather than to the shape of the pericardial sac; and

that hence a greatly enlarged heart may also push aside the edges of the lungs and simulate an extensive pericardial effusion. The faintness of the heart-sounds in such a case serves but to mislead further. *Apropos* of this matter, we once saw Ziemssen deceived by exactly such a condition. The autopsy alone revealed the source of the error.

Altogether, this work is to be highly recommended, and, though not contributing much of originality, is instructive and likely to form a valuable addition to the library of the general practitioner as well as of the tyro, in the clinical study of the diseases of which it treats. Doubtless many will be glad to find an elucidation of the cardiograph and sphygmograph with a plentitude of normal and abnormal tracings. The 317 admirable illustrations would be valuable of themselves independently of the context.

ROBERT H. BABCOCK, M. D.

A TREATISE ON THE DISEASES OF THE EYE. *By* J. SOELBERG WELLS, F. R. C. S. *Doctor of Medicine of the University of Edinburgh; Professor of Ophthalmology in King's College, London, Etc., Etc. Fourth American from the Third English Edition. With copious additions, by* CHARLES STEDMAN BULL, A. M., M. D. *Lecturer on Ophthalmology in the Bellevue Hospital Medical College, Etc., Etc. Cloth, pp. 846. Philadelphia:* HENRY C. LEA'S SON & CO.

The salient features of this work are too well known to physicians and students to require more than a cursory survey of its contents. Medicine has kept stride with her sister sciences in adding to her lore and in the practical application of the great researches elicited by the spirit of the age—progress. In no branch of medicine is this more strikingly shown than

in ophthalmology. Although not more than three years have elapsed since the publication of the third American edition, the author has felt the necessity of adding several chapters and copious notes to bring it up to our present stage of advancement. The latest researches are either directly mentioned, or, where the subject seems to call for a more detailed account than can be alloted to the narrow frame of a text-book, references are made to articles bearing on the questions involved. The chapters on sympathetic ophthalmia and glaucoma are singularly complete in this respect, treating, as they do, of the valuable and but recent labors of Alt, De Wacker, and especially Mauthner; also of the inflammatory and neurotic theroids expounded by Kneis, Ad. Weber, Schnabel, Brailey, Mauthner, and Brixtley Smith. Embodied in the chapter on trachoma we find a concise statement of Sattler's germ theory. The author, in his preface, deplores his inability to include in the same chapter the treatment by jequerity, which was brought to public notice whilst the book was in press. The work can be recommended to students and physicians as a text-book superior to any published in the English language. Dentists will find it a repository of the latest and most important data pertaining to their specialty. To those not conversant with foreign languages, who must depend upon fragmentary knowledge gleaned from reviews, will this work be especially welcome. The book is well printed; the numerous illustrations are well executed.

TEXT-BOOK OF THE DISEASES OF THE EAR AND ADJACENT ORGANS. *By* DR. ADAM POLITZER. *Imperial-Royal Professor of Aural Therapeutics in the University of Vienna, Etc., Etc. Translated and Edited by* JAMES PATTERSON CAS-

SELS, M. D., M. R. C. S., *Eng. Aural Surgeon to and Lecturer on Aural Surgery at the Glasgow Hospital and Dispensary for Diseases of the Ear. Cloth, pp. 800. Philadelphia:* HENRY C. LEA'S SON & CO.

This is the most voluminous work on the subject—a veritable encyclopedia of otology. The first and second numbers appeared in German in 1878–1882. The English edition forms one complete volume. The task of the translator has been performed in a conscientious and highly satisfactory manner. Dr. Cassels deserves much credit and the thanks of all his readers in enabling them to quench their thirst for knowledge at the very fountain head. B. B.

THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE EAR. *By* OREN D. POMEROY, M. D. *Surgeon to the Manhattan Eye and Ear Hospital; Ophthalmic and Aural Surgeon to the N. Y. Infant Asylum; Consulting Surgeon to the Paterson Eye and Ear Infirmary, Etc., Etc. With one hundred illustrations. New York:* BERMINGHAM & CO. *1883.*

In the preface of this book, the author calls our attention to the absence of any reference to the anatomy and physiology of the ear. He refers the student to special works for a thorough study of these subjects. As the book is intended for practitioners and young physicians, we cannot approve of this omission. Physicians, in the active pursuit of their vocation, surely have not the time nor the inclination for exhaustive study, especially of so dry a subject as the anatomy of the ear. Still a certain knowledge of the structure of this organ is highly essential for a thorough understanding of the pathology and treatment of the diseases invading these parts.

We would recommend the author to add to the value of this otherwise commendable text-book, by devoting in the next edition at least several pages to this subject.

Altogether the work is well adapted to the needs of physicians and students. It covers the whole ground of otology in a concise and clear manner. The get-up of the book is quite good. Some of the illustrations, especially those depicting the pathology of the M. T., can be improved upon.

STUDENTS' GUIDE TO DISEASES OF THE EYE. *By* EDWARD NETTLESHIP, F. R. C. S. *Ophthalmic Surgeon to St. Thomas' Hospital, and to The Hospital for Sick Children, Great Ormond Street. Second American from the Second Revised and Enlarged English Edition. With a Chapter on Examination for Color Perception, by* WILLIAM THOMSON, M. D. *Professor of Ophthalmology in the Jefferson Medical College. Cloth, pp. 416. Philadelphia:* HENRY C. LEA'S SON & CO.

This is a carefully prepared little volume, likely to meet the demand of American students, who are so overburdened with lectures that there remains but little time for a thorough study of the so-called special branches. In the division of subjects, the author has deviated from the plan mapped out in the majority of text-books. The first chapter is a concise and comprehensive digest of "the means of diagnosis." The mind of the student is thus at the very beginning imbued with the importance of close and systematic observations.

The method advocated for the detection of faulty color perception is quite simple, and possesses some advantages over older ones. The one referred to has been adopted by the Pennsylvania Railroad for the examination of its employés. The various colors are numbered, thus permitting an expert

at a distance to decide upon the results elicited and tabulated by a non-professional. The test skins have received odd numbers, the confusion colors even numbers. The value of the book is furthermore enhanced by a tabulation of the most important data relating to the connection between ophthalmic complaints and diseases of other organs of the body. The appendix, containing the principal formulæ employed by oculists, with brief references to the physiological action of mydriatis and myotics, is quite an important addition. B. B.

SOCIETY PROCEEDINGS.

CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY.

Illinois Charitable Eye and Ear Infirmary. April 8, 1884.

Dr. Boyer was unanimously elected a member of the society. Dr. Holmes then referred to a case in which he had recently removed a splinter of steel from the vitreous by means of a Gluening's magnet. The incision in the sclerotic, through which the magnet was introduced, was made behind the ciliary region in the temporal portion of the globe, although the foreign body could be seen lying in the vitreous near the equatorial region of the opposite hemisphere. The lens was so far cataractous that the metal could not be precisely located either by oblique illumination or by the ophthalmoscope. Dr. Holmes believed the end of the magnetized probe could in this way be brought near the steel with less violence to the edges of the wound of the sclerotic, choroid, and uteria than if the wound had been made in the nasal portion of the globe. In a case in which, the lens being intact, the metal could be exactly located, it would be desirable to introduce the magnet as near the foreign body as possible, although the reporter thought there is liable to be more hemorrhage from the conjunction at the inner than at the external angle. The doctor

thought that a crucial incision through the sclerotic, although advised, is objectionable, and called for the opinion of the society as to the relative advantage of the various kinds of incision.

Dr. E. J. Gardner thought a crucial incision would expose the eye to greater danger than a long linear incision, in the latter case there being but two instead of four flaps.

Dr. Montgomery expressed a similar opinion.

Dr. F. C. Hotz also advocated the linear incision, and in this connection reported the following case:

Piece of Steel in Vitreous.—August 29, 1882, I removed a piece of steel from the vitreous chamber with Gluening's magnet under conditions which proved a very good result as to the preservation of the sight. The steel entered through the sclerotic on the previous evening. Except the minute cut on the sclerotic, six mill. from the nasal border of the cornea, there was nothing abnormal with the eye. With the ophthalmoscope a lanceolated body was discovered suspended in the vitreous just above and behind the center; it presented a bright, shining, silvery surface, and looked very much in shape as a diminutive silver fish, the head turned downwards. A few dark streaks extended from the body to the sclerotic wound, otherwise the vitreous was clear; the fundus showed no lesion. The sight, I am sorry to say, was not tested. Under chloroform, the scleral wound was enlarged horizontally to two and one-half mill.; the edges were held apart with fine hooks, Gluening's magnet introduced, and, on the first attempt, the steel was brought out. It was six mill. long, one and one-half mill. broad, tapering off to sharp points, and weighed twenty milligrams. The wound was closed up by a conjunctival suture, and the patient put to bed with both eyes bandaged. He was kept abed in a dark room a whole week;

no unfavorable reaction followed, but he could only count fingers at six feet. With the ophthalmoscope I discovered no disturbance in the vitreous, except two dark streaks from the wound to the center and an opaque transverse streak in the fundus above the papilla. During the second week the lower portion of the vitreous became very cloudy, and the opaque stripe in the fundus developed into a distinct retinal detached fold. Later, the obscuration of the vitreous consolidated into several separate clouds, between which portions of the fundus could be seen; some parts of it appeared normal, in some the retina was distinctly detached, and in some it seemed that the retina was separated from the choroid by a thin layer of serum. The patient was under observation three months. No material changes took place, and the sight did not improve.

Dr. G. T. Gardner then read a paper, entitled—

Detachment of the Retina.—After reporting a case of extensive detachment of the retina, in which total reapplication of the detached membrane took place, remaining *in situ* for two weeks, and then, without any perceptible cause, becoming detached again, the lecturer said:

"The literature on the etiology of detachment of the retina is so extensive that the scope of this paper will not permit me to mention all that has been written on the subject, but I will endeavor to record—not with the extension that they deserve—the theories which now seem to be most in favor:

"For the sake of clearness, these theories may be divided into three groups.

"The authors whose theories are comprised in the first group claim that it is a fluid secreted by the choroid, which, accumulating under the retina, produces the detachment.

"Those comprised in the second, that a lack of elasticity in the retina, as compared with the choroid and sclerotic, is the immediate cause.

"In the third group are those who look on a shrinkage of the vitreous as the direct cause of detachment.

"Among the latest articles on this subject, I will mention that of Professor Rava, who thinks that in a partial elongation of the choroid a distension of its elastic layer, and also of its hexagonal epithelium, takes place. The sclerotic also becomes thinned at this portion of the globe. This thinning of the membranes favors, according to him, the filtration of the lymph contained in Schevalbe's spaces, and facilitates its accumulation between the choroid and the retina.

"Brucherm, in a recent communication made to the Congress of Rouen, introduces, in the pathogenesis of the retina, the latest theories advanced by the physiologists about the secretion of the intravecular liquids. He claims that the choroidal epithelium is the secretory element. When this secretion is excessive it accumulates behind the retina, and detachment is produced. As causes of this hypersecretion, he mentions affections of the kidneys, rheumatism, etc.

"Galezowski, in an exhaustive article published in the *Recueil Ophthalmologie*, claims that a circumscribed choroido-cyclitis is the cause of detachment, but that a previous liquefaction of the vitreous must necessarily exist before a detachment takes place. To prove his theory (advanced first in 1873), he reports several interesting cases, and then appends a very instructive synoptic table of 649 cases. Of these 598 happened in myopic eyes, 51 in cases of hypermetropia and emmetropia. In 131 cases only could a rent be detected in the retina. In 120 he observed floating opacities in the vitreous. This author thinks that the presence of floating opacities in the vitreous is a sign of perforation or tearing of the retina.

"Of those who look on the pathological changes of the vitreous humor as the direct cause of detachment of the retina, Henri Muller should be first mentioned. In 1866, he made the assertion that in certain cases detachment of the retina was caused by shrinkage of the vitreous. Previous to this date, however, he had called attention to the fact of the vitreous possessing the property of diminishing in volume, through a

process of shrinkage, which could end in a detachment of this humor from the retina. The first histological investigations in this phenomena were made by Irvanoff.

"Professor Leber read before the Ophthalmological Congress, at Heidelberg (1882), a very instructive paper, in which he explains the detachment of the retina by the so-called perforation theory. By this theory, the frequent phenomenon of sudden detachment of the retina, without a perceptible change in the tension of the eye-ball, is explained. The primary cause of the detachment is a localized alteration of the vitreous in contact with the retina, consisting in hypertrophy of the radial fibers, formation of fine bundles of connective tissue, which, in the process of contraction, exert a traction upon the retina, which finally produces a solution of continuity in this membrane, thus allowing the degenerated and liquified vitreous to pass between it and the choroid. In this process there is simply a change of locality of the fluid from the inner side to the outer; consequently, there is no cause for an increase of tension.

"Leber bases his theory upon the evidence brought to light by the examination of twenty-seven cases of detachment seen by him during the last two years. Of these, fifteen were 'fresh' cases, eleven from a few days to two weeks' duration. In eleven of these a perforation was demonstrated; in one it was suspected, while in the remaining three its existence could not be proved—neither excluded. In long-standing cases, perforations were not seen as often. In twelve cases, existing from ten months to ten years, a perforation was found only in three cases; in four, its existence seemed very probable; not found in five cases. Summing up the twenty-seven cases, a positive result was reached in fourteen; doubtful, four; negative, eight.

"We have now reviewed, though in a very succinct manner, the theories advanced to explain the causes of a disease with which we are unfortunately too familiar. But wherein lies the truth, is hard to tell. All the theories are made so plausible, by their propounders, that one is tempted to accept them as

the truth, and turn away from that uncomfortable state of mind which to uncertainty is inherent. But, unexpectedly, some clinical fact jumps into the field, and overturns the whole theoretical structure, leaving us in the same perplexing situation from which we started. The truth is, although it may pain us to express it, that the etiology of detachment of the retina in myopic eyes, still remains shrouded in mystery.

"In the selection of a theory, we should be guided entirely by clinical experience, for I believe that a clinical fact is worth more than a hundred theories. Experimentation is worth but little in this line of investigation, because the process to which an eye has to be submitted, in order to bring about the condition which we find present in highly myopic eyes, is such that it renders the results untrustworthy. We know that foreign bodies thrust into the eye, experimentally or accidentally, will, through a process of inflammation and subsequent shrinkage of the vitreous detach the retina, but this fact can not explain the causes of detachment in myopic eyes, where absolutely no traumatism has existed. I performed a number of experiments on pigs' eyes, but here also the results were unreliable, not only on account of the post mortem changes which had taken place, but also because the condition of the vitreous is entirely different from that found in highly myopic eyes, and in attempting to render it liquid, or withdraw a portion of it, or inject (or rather attempt to inject) fluid under the retina, so much traumatism is necessary that reliable results are nearly impossible. Experiments may and do cast a little light upon the matter, but it is not sufficient to enable us to draw any positive deductions therefrom. Relying entirely on the clinical test, let us, by its light, examine these theories.

"The theory of subretinal effusion can explain certain varieties of detachments of the retina, if a pre-existent diminution in the volume of the vitreous is admitted. In a *gradual detachment* this theory explains matters in a satisfactory manner; but in a sudden detachment it does not. I cannot conceive how a vitreous, partially liquefied or not, should, as if by magic, decrease sufficiently in volume to allow another

fluid to exude into a chamber limited by a resistant lining, and so do this *without increasing at any time the tension.* This is contrary to all physical law, and, when we remember that the tension, far from being increased, is *diminished*, the conclusion forces itself upon our minds that we must look elsewhere for a more satisfactory explanation.

"We do not find it, I think, in Von Graefe's theory, in which the trouble is ascribed to a lack of elasticity of the retina as compared to that of the choroid and of the sclerotic. This theory does not stand the clinical test, for how can we admit this lack of elasticity in a membrane which gives such strong evidences of the contrary in its inflammatory conditions?

"Let us now turn to the theory based upon the shrinkage of the vitreous as a cause of detachment of the retina.

"Before entering fully into the matter, I will endeavor to explain the reason why the posterior portion of the vitreous, in highly myopic eyes, where sclerectasia posterior exists, is found to be in a fluid, degenerated condition, and also why, in such eyes, there is a tendency to shrinkage of the vitreous.

"The experiments performed by Max Knies, show that the vitreous receives its nutrition from the choroid; the liquid lymph passing through the retina, the external layers of which it also nourishes. At the posterior pole, according to this author, the nutrition is very slight, owing to the greater thickness of the retina at this place. As the retina becomes thinner, the amount of fluid which passes into the vitreous is larger, and it reaches its maximum at the most anterior portion of the choroid. Now, if in the physiological condition the nutrition of the posterior pole is very meager, it is but reasonable to deduct, that, if the choroid at this point is degenerated, the nutrition will decrease in proportion to such degeneration, reaching at last a point where the secretion of lymph is so poor that it lacks the power to constitute healthy vitreous humor. In this manner the liquefaction of the vitreous at the posterior pole of highly myopic eyes—mentioned by Alt—is easily explained. But even if the theory of Max Knies is not accepted—and we admit that the vitreous receives its

nutrition only from the anterior portion of the choroid, the ciliary body—then, too, if there is a lack of nutrition, the first part to suffer will be that further removed from the source of nutrition; in other words, that portion of the vitreous nearest the posterior pole. It is a fact that highly myopic eyes, in which degeneration of the choroid or sclerectasia posterior is present, are not healthy, and the liquefaction of the vitreous is a proof in itself of the poor nutrition that it has received, be its source from the ciliary body or from the whole choroid. The natural consequence of poor nutrition is shrinkage, diminution in volume, atrophy, etc. These premises once accepted, we find that Leber's theory will explain, in a satisfactory manner, the phenomena which take place in detachment of the retina—a shrinking vitreous, in the anterior portion of which a radial formation exists. (Leber.) The adhesions formed by a diseased vitreous, at those points where it is still in contact with the retina, a liquefaction of the vitreous beginning at the posterior pole, and gradually advancing toward the anterior portion of the eye, are the immediate causes of the catastrophe, which only needs one step more to take place. The traction on the retina increases as the shrinkage progresses, thus giving rise to the metamorphopsia and other prodromic symptoms. The continued and even increasing traction, or a sudden jar, overcomes the resistance of the already strained retina; it tears the lympid vitreous, enters behind the membrane, and the detachment is effected.

"Dr. Galezowski, in his excellent article, above referred to, states that he only found a rent in the retina in 131 cases, and that floating opacities were seen in but 120; he therefore claims that the presence of floating opacities, in a case of detachment of the retina, points to the existence of a rent in this membrane, and *vice versa*, that the absence of these opacities is a sign that no tearing has taken place. This statement does not bear the clinical test, however, for we all have seen cases where floating opacities in the vitreous long precede detachment of the retina. The simple fact that the rent could not be seen, does not, in my opinion, prove that it did not

exist, for it might well happen that it was so situated that it could not be seen; indeed, I believe that in many cases they escape because they are so located that the folds of the detached retina entirely hide it from view, and, furthermore, it is not at all necessary for the solution of continuity to be large. The retina tears in a manner very similar to thoroughly soaked blotting paper, as I have been able to convince myself, by tearing the fresh retina under the microscope. There is a moment before the regular separation of parts takes place when a liquid can easily penetrate through it, and as the moment that the retina becomes detached the traction from the vitreous ceases, the rent may remain stationary, and not acquire such proportions as to render it visible with the ophthalmoscope. I do not consider the case which the same author reports, in which a small opacity was seen engaged in a perforated retina, working its way into the vitreous, as a proof that the opacities are formed only in the subretinal fluid.

"There is another form of detachment of the retina, the etiology of which is made clear by the theory of shrinkage of the vitreous, viz.: detachment in folds. In this form, the subretinal effusion theory utterly fails to explain the process; for a liquid secreted under a membrane, which is equally adherent throughout, would naturally expand in a circular form, the detachment would therefore commence at the center of the figure, and gradually creep onto the periphery. On the other hand, nothing easier to account for than a fold being raised by a traction exerted from within. The process can be easily demonstrated, even in eyes where the vitreous is not degenerated, by introducing a very fine pair of forceps into the vitreous chamber, firmly closing them and gently withdrawing them. In this manner I have been able to produce beautiful specimens of detachment in folds.

"I am perfectly aware that this theory does not answer in every case, and that the clinical history of certain cases will militate against it; but I firmly believe that in those cases of detachment of the retina, happening in highly myopic eyes, the immediate cause is the traction exerted by a degenerated

and shrinking vitreous; and no other theory, that I know of, can explain in a rational manner one of its most constant phenomena, viz.: the suddenness of the detachment. Neither can any of the other theories explain in a rational manner how there can exist a fluid behind and another in front of the retina without a perceptible increase of tension."

This paper called forth a long discussion on the merits of pilocarpine treatment. Almost every member had given this remedy a trial; all were unanimous as to its inefficacy in producing a permanent cure.

Dr. Montgomery exhibited a new self-registering perimeter, by M. Blitz (Upsala). It is fixed to the back of the chair in which the patient sits. The test object is carried by a bent arm coming from behind, and is suspended before the patient's eye.* B. B.

* For a more detailed description, the reader is referred to the original article in the *Centralblatt fur prakt. Augenheilk.*, August, 1882, p. 251.

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ORIGINAL COMMUNICATIONS.

ARTICLE I.

FATAL PELVIC HEMORRHAGE FOLLOWING THE USE OF THE ASPIRATOR NEEDLE.

By A. REEVES JACKSON, M. D., *Professor of Gynecology in the College of Physicians and Surgeons, of Chicago, etc.*

It is generally thought that the puncture made by the aspirating needle, whether for diagnostic or therapeutic purposes, is free from danger; and it is employed by most surgeons, without hesitation, both to determine the nature of doubtful swellings and to evacuate deep-seated abscesses, cystic collections, etc. The instrument has even been thrust into an aneurismal sac containing fluid blood without untoward consequences. It is true that death has followed its use in some cases in which it was employed to remove the fluid from ovarian cystomata, and these are the only ones, so far as I am aware, in which a fatal result has been attributed to it.

The following case shows, however, that the instrument is not so entirely safe as is usually supposed, and that even a fatal hemorrhage may follow its employment.

On August 16, I was called to see Mrs. L. E., in consultation, and received the following history: She was about 25 years of age, and had one living child three years old. During the summer of 1883 she had a premature labor, followed by septic fever, from which she perfectly recovered.

In the afternoon of August 8, after suppression of menstruation for three months, she was attacked with severe flooding, fainting, and labor-like pains. Dr. H., the medical attendant, was summoned, and found the os uteri dilated to the size of a quarter of a dollar. Later, in the evening, the hemorrhage and pains continuing, the vagina was tamponed. At midnight the tampon was removed, and the fetus escaped, leaving the placenta partially protruding from the os uteri. A portion of it was removed by traction, and as much as possible of the remainder was scraped away by means of a dull wire curette. August 10, the patient had a severe chill, followed by headache, fever, and uterine pain. The curette was again used, with the result of bringing away a few shreddy pieces, and the uterus was then injected with Churchill's solution of iodine. From that time onward there was a daily chill, with strongly-marked febrile symptoms, and continuous pelvic pain and tenderness.

On examination, I found general pelvic fullness with heat and great tenderness, especially in the right broad ligament. The uterus was bulky and slightly movable; the os sufficiently open to admit the end of the fingers. Issuing from the latter was an offensive, thin, bloody discharge. She was given morphine, potassic bromide, quinia, etc., and had intra-uterine injections of carbolized water. After two or three days the discharge lost its offensive character, but the inflammatory and febrile manifestations continued.

At this time, a brother of the patient, an accomplished phy-

sician, arrived, and took personal charge of her, so that every detail of treatment was assiduously enforced.

On the evening of the 22d I detected a soft spot in the right ligament, about one inch from the uterus. It was decided to introduce the aspirator needle at the place with the hope of finding pus. This was accordingly done under antiseptic precautions. There came into the receiving bottle about a dram and-a-half of serum, tinged with a little blood. Not feeling satisfied, I withdrew the needle, and re-introduced it, directing its point rather more toward the uterus, with the result of bringing away two or three drams of pure blood. The needle was then withdrawn, and the vagina syringed with hot carbolized water.

In a few moments the nurse informed me that there was bleeding from the vagina, and on returning to the patient, I found that there had indeed been a loss of two or three ounces of blood. I at once proceeded to tampon the vagina, and the hemorrhage appeared to be checked. As the patient was being lifted to a proper position in bed, after the operation, I observed a peculiar ashy hue overspreading her face, which I attributed to a partial fainting from the raising of her head.

Having an important engagement in the country, and barely time to catch the train, I was obliged, very reluctantly, to leave the patient at this critical juncture, in charge of her brother.

The latter informed me by letter, subsequently, that the blood, bright and arterial in character, to the extent of *two quarts*, continued to flow notwithstanding the presence of the tampon, which he tried to make firm, and that death ensued in less than an hour after the operation.

ARTICLE II.

INTRODUCTORY LECTURE BEFORE THE CLASSES OF THE CHICAGO MEDICAL COLLEGE, SEPT. 23, 1884. *By* J. E. OWENS, M. D., *Professor of Operative Surgery and Surgical Anatomy, Chicago Medical College, Medical Department Northwestern University, Chicago.*

GENTLEMEN:—As the representative of the faculty of the Chicago Medical College, it becomes my pleasing duty, this evening, when we inaugurate the opening of another college year, to offer a cordial welcome to every student in this amphitheater,—those who are here for the first time; those who have advanced to the middle year, and those who have the gratification of counting the present session as the last of their collegiate curriculum. Since the close of last session several changes have been made in the faculty. The chair of physiology, left vacant by the resignation of Professor Gradle, has been filled by the appointment of Dr. R. W. Bishop. To Dr. Danforth, one of the professors of clinical medicine, has been assigned the duty of teaching you the pathology of renal diseases. Prof. Danforth has for many years not only made renal diseases a special study, but he has taught this branch in the more important medical colleges and hospitals in this city, and I congratulate you that you can avail yourselves of the opportunity of profiting by his teachings. Dr. W. E. Casselberry, whose appointment as lecturer last year was made too late to appear in the announcement for 1883–4, has, since the close of the last session, been elected by the trustees full professor of materia medica and therapeutics. Dr. W. W. Jaggard has been made adjunct professor of obstetrics. To Dr. Frank Billings' duties as demonstrator of anatomy, the faculty has added those pertaining to the office of lecturer on physical

diagnosis. Dr. J. S. Marshall, whose lectures last winter were so acceptable, and who at that time had not received a formal appointment, has been elected lecturer on oral and dental diseases.

Dr. N. S. Davis, Jr., appears as lecturer on general pathology and pathological anatomy, working in your interests, under the direction of Prof. Christian Fenger, who has full charge of this department. Dr. Frank S. Johnson has received the appointment of lecturer on histology, acting under the direction of Dr. Lester Curtis, the professor of histology and practical microscopy.

These changes in the curriculum, together with the new appointments, have been made with a great deal of circumspection on the part of the faculty, with the view of adding to its efficiency and facilitating its work. You have confided to us a great trust, and it is doubtless a matter of extreme concern to you to know something of the principles which will guide us, and the methods that will aid us in preparing you for your future career.

The college which you have selected, gentlemen, has been in existence a quarter of a century, and this was celebrated last spring in a fitting manner.

The functions of a medical school are to train students to become medical practitioners, and to pass certain examinations which are the legal tests of their fitness to practice. The choice of the medical school should be a matter of great importance to you. Many elements are to be considered, the prestige of the school, the system of teaching, the moral influence, example and personal qualities of its teachers, the character and standing of its alumni. I can honestly assure you, gentlemen, that you, who have cast your lot with the Chicago Medical College, have made no mistake. You have

entered a college that has the honor to have made the very first earnest, honest and successful effort for reform in medical teaching, in this country, by refusing to adopt the methods of education then and now in operation in almost all the medical colleges in the United States—methods which the profession and medical societies have for the most part vainly protested against for many years. By the defective method referred to, you, who find yourselves for the first time in a medical college, at the beginning of your studies, would be expected not only to listen to, but to understand the same lectures delivered to the most advanced students, namely, those who are applicants for the degree of Doctor of Medicine, in the last year of study. You can well imagine the difficulties you would encounter, and may also imagine how defective must be such medical training. In the Chicago Medical College, the system of instruction, as most of you know, comprises three consecutive annual courses of lectures. During the first year the student is instructed in anatomy, physiology, histology, practical microscopy and general chemistry, the very foundation of his medical education.

The information thus gained, in the first year, is applied in the second, and enables him to study intelligently, and to the very best advantage, the branches of study embraced in the second year. In a like manner, the members of the senior class are most thoroughly fitted to comprehend the subjects presented to them in the third year, which embrace the theory and practice of medicine, surgery, gynecology, diseases of children, ophthalmology, otology, nervous and mental diseases and medical jurisprudence.

In my opinion, the system enforced by this faculty is most admirable, and bear in mind, gentlemen, that to this college belongs the honor of priority in this matter in this country, and

not only that, it is due this institution to announce that no other system than the one mentioned has ever been in force in this school. The student is left no choice of an easier but less efficient method. He is obliged to conform to these requirements of the Chicago Medical College or go to some other school. It has ever striven for the broadest and most liberal culture of its students, and to this end it has worked successfully for so long a period, never at any time having made any sacrifice of principles in order to obtain large classes. It has never held out such inducements as low fees, short terms, low order of attainments, but it has always worked to secure the best men. Its graduates leave the college as well educated for their life-work as those of any other college in the United States. And you, gentlemen, as so many have done before you, if you perform your part, shall be well prepared for holding places of honor in society and the profession.

This college has done *a great public service* by implanting amongst our people well-educated and worthy physicians and surgeons. It has done another good thing, namely, it has exerted a wholesome influence in *establishing* the *graded course* in *a few* of the medical schools of this country. Dr. Wm. A. Hammond, of New York city, a gentleman of world-wide reputation, in an article on medical education made use of the following language:

"Thus far but few medical colleges have done their full duty in the matter of arranging their courses of lectures so as to give the best possible advantages to the student.

"So far as I am aware," said he, "the only ones that have established graded courses are Harvard Medical School, in Boston, the University of Pennsylvania, in Philadelphia, the Chicago Medical College, in Chicago, the medical department of Syracuse University, in Syracuse, and the medical department of Yale College, in New Haven."

Gentlemen, I will suggest one change in this, namely, that inasmuch as the Chicago Medical College was the first to make this radical change in medical education, its name should stand at the head of this honorable list. The experience that you will gain here is partly derived from the system of instruction as between teacher and pupil. Some, in decrying lectures, which compose the greater part of the course, have advanced the idea that all can be acquired from books that is obtained in the class-room, and that the facts presented in lectures pass along too rapidly to produce a lasting impression. Such arguments are plausible, but unsound. Your teacher, in order to do the best by you, has gone over and analyzed a great mass of material for a single lecture. He has excluded all extraneous matter and controverted questions, epitomized as much as possible, and thrown in observations and discoveries not elsewhere to be found. It would require a vast extent of reading to cover anything like the ground occupied by a single lecture. The transitory impression depends upon inattention and want of skill in note-taking. The fault of most beginners is to attempt to note down too much. Endeavor to catch the words that are the key to the sentence, and write these down in the order in which they happen to fall. Take then the very first opportunity, while the subject is still fresh in your minds, to work them into a consistent whole. You thus apply your critical faculties to your notes, and the attention which this requires makes this knowledge your own. Let me advise you to study with a view to the acquisition of knowledge, and not merely to the passing of examinations. In addition to the daily class examinations or quizzes, this year the Faculty will still further advance the interests of the student by including recitations in the system of instruction. The daily quizzes are designed to gauge the amount of your knowledge, to correct

its deficiencies, to make it thorough and accurate, and thus to ensure you safer progress in the study of medicine. By recitations we hope to *enforce* a closer individual application to the different branches, and to enable you the better to unravel the more difficult subjects. You must remember, gentlemen, that, when you have completed your studies in this institution, you will pass out into an immense professional field armed with the implements for your work. There you must compete with those who have gone before you. These are very numerous. I am told that in every community there are three or four doctors where one is really needed. Those succeed who are the best qualified. You can readily see, then, why this college gives so much thought to methods of instruction. If it is true that Canada has one physician for every 1,193 inhabitants, Austria one for every 2,500, Germany one for every 3,000, Great Britain one for every 1652, France one for every 1814, and the United States one, both regulars and irregulars, for every 600, with you it is a plain case of the "survival of the fittest."* Those who are to flourish must start well, and their success depends upon great skill, great tact and great industry. Let me remind you that you cannot begin too early to familiarize yourselves with the objects presented to you in the lecture room and at the clinics. At the hospitals you will, from the first, be required to see, listen, handle, smell, and, if need be, taste. The more you train the senses, the more delicate and discriminating they become.

The amount of information gained in this way cannot be overestimated, and it will continue to increase through life. In the hospitals, as well as in the college, you will become conversant with the various instruments of precision, the stethoscope, the ophthalmoscope, the laryngoscope, the sphygmo-

*The Physician Himself.

graph, the thermometer, the microscope and others. Here, gentlemen, you must learn to be gentle, circumspect and forbearing, for much of your work now and hereafter must be done in the midst of those who suffer, those with painfully exalted sensibilities, those whose minds and bodies are wearing from want of rest, and exhausted from disease. Let me urge you to observe every detail in the clinics. It is a common fault with students to pay no attention to the "little things." Too often, only the tissues as they seem to part at the touch of the knife, the flowing blood, the grand result, claim their attention. There is so much to learn before you come to the operation. Much may be learned by studying the expression of the patient, his movements, his manner, the condition of the internal organs, the bearing which organic diseases and functional disturbances have upon the results of operations. Early study to simplify complications. This is one of the essentials of success. If an operation is about to be performed, note the preparations, the position of the patient, the number of necessary assistants, their arrangement. Get a clear idea of the essential instruments employed in the individual operations, and also those—a kind of reserve corps — that *may* become necessary in possible emergencies. Do not consider the sponges, ligatures, basins, and other receptacles, beneath your notice. In this way you will learn to comprehend the certainties, the probabilities and the possibilities of every operation, and find it an easy matter to make such an arrangement and to take such precautions as will, when you become engaged in practice, bring you always full-handed and admirably prepared for your work. Disease is so expressive that a close observer, and one who is well trained, may make an unerring diagnosis at a glance; in another instance, a few sounds fix exactly the condition of the

diseased organ; in another, smell and taste become invaluable; in still others, touch and manipulation are aids that cannot be overestimated.

Indeed, I cannot conceive, after a student enters the lecture-room, or approaches the bed-side, that he can spare a moment from the special work before him. In the lecture-room, before the lecture begins, you may often find a few moments that can be well spent in reviewing, correcting, or rearranging the notes of the previous lecture. Remember that medicine is an honorable calling, and if you are not resolved to uphold that honor, you have mistaken your mission. Honor and duty require you to do right because it is *right*, and not for policy's sake. The dangers and temptations of student life in Chicago are many and varied. Next to those of high principles, that it is hoped all have instilled into them in earlier life, that earnest resolve to fill in this world the place of a man—the ever persevering application to the work before you, in mastering the many details and principles of the medical sciences, is the best safeguard. You are about to enter a society differing in many respects from any amongst which you have hitherto lived. From the very moment that you enter these halls you become in a certain sense members of the medical profession. You will be brought in daily contact with your professors, and other members of the fraternity. You will shortly become more or less intimately acquainted with each other. Similar aspirations and prospects will draw you together, and the friendships thus early formed will doubtless be amongst the sincerest and most lasting of your life.

It occurs to me that you must have an exceedingly inadequate conception of the profession of your choice—a profession whose members must cultivate science for its own sake, and must apply this science to the wants of the com-

munity, in encouraging the well being of mankind, by promoting the growth of a robust and healthy population, by searching out the causes of disease, and diminishing the rate of mortality. Why you have chosen this very liberal calling may not be clear to all of you. Certainly you have been influenced to take this step for a variety of reasons. Perhaps I can do you a service in detailing the salient points in the life of one most worthy of emulation. This is the more agreeable to me, inasmuch as the life of such a one is a scrap of the history of surgery.

Indeed, gentlemen, the very best wish I can entertain for you is that each one of you may become a Nélaton. Note his happy qualities.

*"Love of work, sustained by a firm will, a precocious maturity, a sure judgment, much "finesse," united to a rare good sense, and that gift of nature, desirable among all, and which one cannot acquire—a personal charm. Add to these, propitious circumstances, rendered more favorable still by his prudence and his moderation."

From the very beginning of his career, one could see him advancing with a steady step, and, without resting or stopping a moment, attain successively to every degree of success, appearing at last at the summit of French contemporaneous surgery. He acquired one of those reputations of which neither time nor distance renders us unmindful and which our fathers had never known.

Auguste Nélaton was born in Paris, June 17, 1807. He was the second son of Alexandre François Nélaton, upholsterer, and of Marie Louise Lauriau, daughter of a merchant of St. Denis. Soon after the birth of his son, the elder Nélaton entered the service of the army. In 1811, at the epoch of the

*J. Bédard.

Russian campaign, he left, at Saint Omer, where he was then residing, his wife and children, whom he was not to see again. At first the news from him came regularly, then more rarely, and finally ceased entirely. The resources of the family became finally exhausted. Then came days of struggle. But Mme. Nélaton was not one of those who remained inactive. She did needle-work, and, thanks to her energy and skill, the humble home was kept supplied. Happy the sons of those courageous women, whose good example engrafted in the heart of the child, upon the love of mother, a sentiment of duty and respect for work.

When Mme. Nélaton returned to Paris, in 1821, the times had improved. The son was placed in school. He gained there all those little distinctions so flattering to youth and indicative of success. It was there that he made the acquaintance of a tutor, who became finally a distinguished physician, M. Requin, then a student of medicine, and whose counsels probably decided the future of Nélaton.

In 1828, having finished his literary studies, he began the study of medicine. "Claude Bourdelin," says Fontenelle, in his Éloges, "was born in good circumstances, and hence he could live comfortably, although all the world enjoyed good health." A fine Greek scholar for his time, the physician of the Duchess of Burgundy was, however, more occupied in translating Pindar than in taking care of the sick. If there are a favored few who can live without work, there are others, less favored, who must work in order to live. Young Nélaton had a smattering of Greek, but, nevertheless, the recollection of his youth had left profitable lessons, and he appreciated the value of time.

Two years had hardly passed when he was made externe in the service of Dupuytren. Soon after, having come out suc-

cessfully in the concors for interne, he had the good fortune to meet a master whose good sense was only equaled by his modesty, M. Baffos, who, convinced of the value of the experience which one acquires by hard work, extended to his pupils many clinical favors. Our new interne took care not to lose any opportunity that presented itself.

The asylum to which he was attached, being devoted to the care of sick children, offered a vast field for research. It was there that Nélaton gathered the materials for his inaugural thesis. Having collected his data from nature, his work on Tubercle of Bone, well deserved a place in surgical literature. For the first time that frightful evil was searched for in all parts of the osseous system. At that time Dupuytren, regarded for a long time as the greatest surgeon, possessed a prestige without an equal. The ambition of youth was to approach him, to become attached to him, one felt proud to be counted amongst his disciples, and this favor was much sought after. Temporarily absent from the Hotel Dieu, Nélaton did not neglect to follow the lessons of the master, and he longed for the moment when he could enter again the services of this great surgeon. He returned in the early part of 1835, but Dupuytren was no longer there. For some time sickness kept him away. He never reappeared, and died a month later, February 8, at the age of fifty-eight years. In the midst of the élite of the French schools, merit was counted at its just value. M. Nélaton was becoming known, he was attentively listened to, his knowledge valued, his approbation sought after. He had no haughty manners, the usual companion of presumptuous inexperience, but a modest demeanor based upon firmness and assurance.

"In the ward of the Hotel Dieu," said M. Diday, in charming pages, dictated by the recollection of early friendships, in

the midst of future great men who were gradually getting a foothold in that legendary entre-sol, the entrance of Nélaton always created a sensation. One felt attracted towards this gentle young man by a peculiar charm mingled with respect." The old Hotel Dieu of which M. Diday speaks, with its dark wards, haunted by work and hope, no longer exists except in memory; but in the new sanctuary, to-day as formerly, a courageous and proud youth is always on the alert for an opening through which he may pass on to eminence. 1839 was a fortunate year. At the close of a double concours, he was named agrégé of the faculty of medicine and surgery of the School of Paris. He was then thirty-two years old. At that age success has an inexpressible charm, either because one feels it in a more lively manner, or because the imagination embellishes the present by the promise of a still more brilliant future. "The first lights of Aurora are not more dazzling than the first rays of glory."

The reputation of Nélaton was commencing to spread abroad, he could, however, still command his time. There was a period of about ten years, perhaps the most fruitful of his successful career, during which, thanks to an existence wisely regulated, he lived in continual association with science, devoted many hours to work, learned a great deal and prepared much for the future. At that time he conceived the idea of connecting his name with a great work, and undertook the publication of "Treatise on Surgical Pathology," of which he was only able to compose the first two volumes. In 1850 he entered the concours for the Chair of Operative Surgery, which gave M. Malgaigne to the faculty. The following year the decisive contest took place, at the termination of which he came into possession of the Chair of Clinical Surgery, upon which his teachings threw so much luster.

French surgery emerged from obscurity with Guy de Chauliac, about 1360. For nearly 200 years it was a profession forsaken by literary men, when there appeared the great Ambroise Paré. It was a long time after that, when there arose two men of first order, namely J. L. Petit and Desault. Between them they occupied a part of the eighteenth century, as Dupuytren filled the beginning of this. Coming after Dubois and Boyer, heir to the traditions of French art, brought up at the school of Hunter and Bichat, an experimenter at a time when physiology had hardly ceased to be speculative, admirably gifted for teaching, Dupuytren, in a few years, had become the first surgeon of his time. In the new impulse which his skill gave to surgery, the operative technique always held the first place. Equally sought after by the operator and the one operated upon, rapidity in execution became a necessity.

But this manual dexterity, greatly esteemed and very praiseworthy, especially at a time when the physician had not gained a complete mastery over pain, was in reality but a secondary quality. Surgery only became a veritable science the day that it emerged from the shop of the adroit barbers, and thus overstepped the limits of its etymology. It has long since reached a much higher plane. The operation itself is not the greatest of the services which surgery is able to render. The operative domain is but a bondage which science from day to day renders lighter and more endurable, seeking to free itself from a bloody tribute by becoming more and more the physician and less and less the surgeon. This should be the aim of every true surgeon.

Contemporary surgery crystallized this truth in a single word, Conservatism! Such is the motto of progress. Is it not a splendid eulogy of French surgery to say that it has contributed largely to this new evolution?

It is well known, Nélaton has said it himself, that the work on surgery which bears his name, and the publication of which he commenced, was continued and completed by his pupils.

In order to know him well, to judge him as he should be judged, we must follow him in another role. Early his taste carried him towards the practical side of science. Rare qualities had revealed themselves in his clinical conferences at St. Louis, and it was easy to foresee what he would one day become. When the doors of the faculty opened before him, he was forty-four years old. He was no longer a young man; still he was not of that age when, having nothing more to work for, the professor foresees repose in teaching. The end was not yet attained. He was still ambitious.

Let us advance with him. Nélaton was a thorough professor. Not that he had that wonderful faculty of expressing himself like most men of showy minds, who seduce rather than persuade, but it was his easy-flowing, unstudied language, slow and measured, that impressed his hearers. He knew so well how to say what was necessary, and he spoke to the point. Clearness, precision, exactitude, were his predominant qualities. "That which is not clear is not French," said Voltaire, and Nélaton was a true Frenchman.

Ordinarily those who have to be taught know nothing or very little, and the professor, in order to make himself understood, must first raise his audience to his level. He excelled in this. There is always a word better than any other that expresses a thought. The happy words came of themselves to his lucid mind, and, without seeking for rhetorical effect, he often succeeded in it. His clinical teaching was the constant object of his preoccupation. Frequently he was seen reappearing in the middle of the day, in the wards assigned him, in order to examine again, at his leisure, the patient that

was to be the subject of the next day's lecture. Endowed with great knowledge, he connected the observations of the moment with analogous facts which he had witnessed, or of which he had read in the annals of science. Proceeding alternately by comparison and by induction, he at one time devoted himself to sounding the origin of the disease, at another time its symptomatic expression engaged his attention. He was thus enabled to get at its connections and affiliations, and soon became master of the problem, throwing light upon obscure points and removing all obstacles.

Such a lecture had for his audience the charm of improvisation, when it was really the fruit of long meditation and arduous research. From the beginning he had voluntarily adhered to this inflexible method. Such is the secret of his diagnostic powers which have so often astonished his audiences.

Let us note in his life that which he has stamped with progress. The very best work in reparative surgery is comparatively very imperfect. Inspired by the fine studies of one of his colleagues, he, in an operation for restoring a nose which lacked the osseous frame-work, included in his flaps the periosteum from the neighboring part, in order to give the newly made organ the desirable solidity. In closing an abnormal orifice, or reforming a canal where only a gutter remained, instead of borrowing a pediculated flap from the neighborhood exposed to the dangers of mortification, he cut a kind of bridge, attached on each side to the living parts by two bands, and the enclosing piece was put in place simply by sliding. His operations performed with a view to remedying the unfortunate contraction of a cicatrix, and his studies in secondary hemorrhage and many other subjects which we cannot now touch upon, attracted much attention. In the application of galvanic electricity to surgery, the thermic or galvanic cautery is most

frequently employed. By the aid of a current of proper intensity enclosed in a handle, a piece of platinum in the shape of a knife is made to divide the tissues slowly and without hemorrhage. age. But the chemical action of the current can also be utilized. The needles, which represent the poles of the electrical apparatus, being inserted in the living parts, the interposed tissue closes the current. The passage of electricity determines in the parts traversed the phenomenon of electrolysis—that is to say, a separation of elements, a slow disorganization, or a kind of separating necrosis.

In 1864 Nélaton explained to the Society of Surgery the advantages of the then new method which may be called Italian. In a few sittings, he obtained a cure without pain or bloodshed of one of those deeply placed cervical tumors, which the knife could only reach at the price of dangerous mutilations.

He made the operation of opening the intestine for occlusion more certain in its results by first fixing the intestine to the lips of the abdominal wound, and opening it only after adhesion of parts had taken place.

In the operation for stone, he proposed, in order to avoid lesion of the bulb in endeavoring to secure a roomy opening, to carry the incision as far backwards as possible. He pointed out the danger of meddling with certain lymphatic tumors of the groin. He insisted upon the necessity of proceeding to the complete extirpation of cysts which develop beneath the hyoid bone, in order to guard againt their return. He showed that pulsatile tumors of bone are not aneurisms but simple varieties of osteo-sarcoma.

Instead of abandoning pelvic aneurisms, for which neither opening the sac nor compression of the vessel is possible, coagulating injections appeared to him indicated.

He called attention to a singular malady in which the foot

ulcerates, wears out, so to speak, from without inward, on every part that touches the ground, including the bone. We are more dependent on the time in which we live than we think. We belong to it by education, by our ideas, by our emotions, by our friendships, by our recollections, and we could not be justly judged except through our own surroundings. Following that rugged path where incessant labor and painful trials are the price of success,—trained at the school of liberal teaching then flourishing,—in the midst of valorous men who, by example, cherished his hopes and sustained him in his work, he was one of those young men who, having emerged from the amphitheater a perfect anatomist, easily became a skillful surgeon.

A little later, Dupuytren shared the fruits of eminence with Nélaton, just as formerly Desault had shared them with Dupuytren. Both accomplished professors and clinicians, they made their reputations more by speech than by pen, and powerfully impressed the youth of their time with a seductive teaching. Endowed with a penetrating sight, with inventive minds, they showed themselves equally able in putting into practice all that could assist the supreme aim of their art, namely, Cure.

The one was gentle, open, accessible to all. The other was reserved, studied, impenetrable. There are men who seem born to rule others ; they recognize no master, want no equals, and suffer themselves to divide with no one.

Nélaton, more modest and generous, associated more than once with his young confreres in the merit of work. Having shared in the labor, he wished them to participate in the honor. He was well in advance of the olden times. Great changes which he had witnessed, and in which he had played a part, had taken place. To the surgery of yesterday, absorbed in

perfecting operative procedures, had succeeded a surgery less impatient.

Our own country had just given the world a new wonder, which can only be compared to vaccination, namely, the momentary insensibility and happy forgetfulness which result from the inhalation of ether. Simpson, of Edinburgh, a few months later found in the vapors of chloroform a still more rapid but more dangerous anæsthetic. To suppress pain, to calm the fright which an operation excites, to avoid the painful anguish and shock which result from these influences, are some of the benefits of the, then, new discovery. The patients find in it other advantages, less apparent, perhaps, but really no less precious.

The surgeon, having no longer the spectacle of suffering before him, of which even the most hardened soul is not totally unmindful,—having now no longer the need of subduing the patient or controlling himself, he sets to work with a freer mind and a surer hand. No longer preoccupying himself with a celerity containing sometimes an element of danger, he can proceed with a prudent slowness, with more time to think of results, which should be, in fact, the predominant thought of the surgeon. Being the last resource, compelled by necessity, the operation is a new peril, to which we are only permitted to expose our patients on condition that we concentrate all our energies to secure a successful issue. An impalpable dust, suspended in the air, surrounds us. Rare at the tops of mountains and in the solitudes of the fields, organic molecules are disseminated in the air of cities and accumulate in the interior of our dwellings. The greatest accidents are to be feared amongst the wounded in crowded habitations, insufficiently ventilated. Protected on all sides by an epithelial cuirass, within as well as without, in the way of constant renewal, a

healthy man offers to these invisible enemies a barrier for the most part inaccessible. A wound is an open frontier which must be defended, so much the more since the open door offers a double danger, namely, the ingress of the invisible enemy or the exit of our vital forces. From his début in hospital practice, Nélaton had been wrestling with those frightful complications of wounds whose mild forms are inflammation of the lymphatics, erysipelas, phlegmon, and whose highest expression is the deadly pyæmia. He had seen surgery, for a long time disarmed and submissive, finally enter into combat with this horrible plague.

Avoid as much as possible, said he, the open wound, and when it is necessary to have recourse to the knife, prevent in every way the introduction of the subtle poison by establishing quickly a protective barrier, and if, in spite of all, the septic agent appears at the surface of the wounds, try to expel it, or destroy it. The value of the means proposed is best seen when put in practice.

He was one of the first to use alcohol as a dressing for wounds, and personally interested himself in making known its value.

It is true, that, at a remote period when surgeons boasted of the most varied compositions, balms and mixtures of all kinds, to say nothing of the charms of the supernatural of Paracelsus, a few surgeons, bolder than others, treated wounds with hot water. But it is not progress to follow at random a path whose end we miss and which we lose as easily as we enter it. All the attempts of which we speak would be vain did not hygiene of the sick-room follow at the same time. Nélaton often insisted, in his teachings, upon the tried principles of prophylactic surgery. He taught that there are no "*small things*" in the art of curing, and that every detail has its importance,

since the life of the patient may be endangered by a lotion badly made, or by an unclean element of the dressing.

To operate in good atmospheric conditions, to aim at rapid cicatrization—in a word, try to obtain immediate union, is the ideal of all reflective minds.

He took an active part in the surgical society, especially at the time of his début. He appeared but once or twice at the Academy. In 1856, on the occasion of his first appearance there, he took part in a hot discussion upon one of the gravest operations that can be performed upon woman, and of which the most independent, and, at the same time, the most incisive speaker, said, "That it would surely put the patient beyond the possibility of a relapse." This operation, that of ovariotomy, conflicted too violently with the existing ideas of that time, relative to the gravity of penetrating the peritoneal cavity, to be accepted without resistance. Ovariotomy was then looked upon as a kind of criminal procedure. When it came to France for the first time, from England, about 1840, it had already been practiced in our own country for more than thirty years. The first attempts made in France had not been fortunate. In England the most eminent surgeons condemned it. It was the repeated successes of Wells and Baker Brown that attracted anew attention to it.

November, 1861, wishing to see for himself, he went to England. Five operations made under his eyes by Baker Brown removed all his prejudices. He returned convinced. In his clinical lectures of the following year, he made an appeal in its behalf to his young colleagues. He, the prudent surgeon, par excellence, strove to dissipate exaggerated fears, and asked them to judge only after giving the operation a fair trial. Soon after, he detailed to the Academy the operation done by his esteemed confrère, M. Demarquay. It is not easily for-

gotten how much he insisted that they should not be discouraged by that first failure. Almost at the same time a young professor, Koeberlé, then his compatriot, successfully performed in Strasbourg a series of brilliant ovariotomies, which exerted a powerful influence in legitimizing the operation. It can be said that to Nélaton is due the honor of having acclimated this new American importation. If the operation, he thought, was to be dreaded, the disease was still more to be dreaded. Inevitable death is the fate of its victims. If the operation has its perils, it has also many chances of a happy result.

Said Nélaton, in one of his lectures, "I cannot too strongly urge you to lay aside sentimental prejudices." In the face of a disease, it is necessary, when the critical time has arrived, to put in parallel the gravity of the evil and the resources of our art. And, further on, he added this recommendation: "It is of great consequence that surgeons in high places should give their moral support to those of our colleagues who are willing to assume the responsibility of such operations."

The following year an unforseen event made the name of Nélaton renowned. August 29, 1862, at Aspromonte, Garibaldi, who was fighting for the independence and unity of his country, being in the front of the volunteer lines, was struck by three balls, at the first fire of the regular Italian troops. One contused the left knee, the other grazed the right hip, the third caused a more serious wound and penetrated the right ankle, a little above and in front of the internal malleolus. Garibaldi took only a few steps, when, from pain, he was obliged to sit down, after which he made no further attempts to walk. A few minutes afterwards, on the battle field, Doctor Albanese, having noticed on the other side of the foot a slight swelling, made an incision at that point. Not having found the ball, he

thought it prudent to wait. The wounded man was conveyed in a steamer to Spezzia, and entered the fort of Varignano on the evening of September 2d. Two days afterwards, in the presence of Rizzoli, Zannetti, Prandina, Negri, Riboli, and of Albanese, Repari and Bazile, physicians and friends of the general, Professor Porta, of Pavia, explored the wound. The consulting physicians concluded from this examination that the ball was not in the wound. M. Bazile, however, had some doubts on this point, and so expressed himself several times to Garibaldi, and also to Professor Porta. Nélaton was summoned. He arrived at Spezzia Tuesday, October 28th. The general had been confined to his bed two months. At the very commencement of the exploration he felt convinced that the ball was in the wound. The introduction of an ordinary probe gave to his equally trained ear and hand a double sensation, which left no doubt in his mind as to the presence of the ball. Such was also the opinion of Partridge and Pirogoff, who came three days afterward. Having returned to Paris, Nélaton reflected on the surest means of removing the doubts in the minds of his Italian colleagues, and he related with his accustomed modesty how he was directed in the right way. M. Emmanuel Rosseau, said he, gave him the hint. It consisted in introducing into the wound a body of small dimensions, capable of receiving a metallic impress easily recognized. A few days later, Nélaton sent to the surgeons of the general a probe having an olive-pointed, unpolished white porcelain extremity, upon which, by a rotary movement, the projectile revealed its presence. Professor Zannetti, who had failed with the electrical battery, obtained with this probe received from Paris the certainty so much desired. November 22d, a piece of compressed sponge was inserted in order to dilate the wound, and the next day Zannetti extracted the ball with ease.

The same day Nélaton received from Pisa the following telegraph, signed by the Prefect of Pisa, Torelli: "Ball extracted from Garibaldi's wound, verifying your diagnosis, guaranteed by your probe. All honor to you."

In the first part of December the general wrote to Nélaton: "*My very dear friend:* I owe you a few words of love and gratitude. Your coming to Spezzia has been a fortunate thing for me. If at any time a doubt had possessed my mind, your interview was so eminently sympathetic, your words of encouragement so eloquent, that I could no longer doubt my recovery. I am a great deal better since the extraction of the ball, so skillfully done by our illustrious compatriot, Professor Zannetti, by the aid of the instrument which you had the kindness to send me. May God bless you." "GARIBALDI."

The name of the wounded, the gravity of the event, of which Italy was the theatre, the eminence of those gentlemen who had held a different opinion, curiosity and public expectation, conspired to popularize the French surgeon. The name of Nélaton was spread far and wide, and he from this time took the first rank amongst his illustrious contemporaries. In our day, when talent abounds, individual renown is rare. At the time when he was called to Italy he enjoyed a reputation uncontested. After this event his success increased, and very soon his practice became immense. His prudence, his gentleness, the confidence which he inspired, the affectionate solicitude for his patients would have been alone sufficient without the merit of the surgeon, to explain his growing reputation. His frank and smiling face dissipated every fear. With him, rash undertakings were never feared. The confidence which he inspired was absolute. Full of kindness for his colleagues, he never intruded. There was in the medical corps no teacher more beloved or more sought after than

he was. During the last ten years of his surgical practice there were but few difficult cases in which he was not called in consultation.

Toward the middle of 1867, M. Jobert being dead, Nélaton was called to the office of surgeon to the Emperor. To-day, when the idea of equality has become, as it were, a law of justice, the physician has no superior. Medicine demands a versatile talent, and a physician most worthy of the name represents the highest type of moral and intellectual culture. The social mission which he is called upon to fill, the extent and variety of knowledge which it exacts, the number and importance of its applications, assign him in our society a position which yields to none. His profession brings him in contact with every class of society, and it is his duty to proudly retain in his association with the powerful of the day what others lose, namely, sincerity and independence. In the office referred to, which he had not sought, Nélaton knew well how to foster in his own person a respect for the profession to which he belonged. On the very eve of the French disasters, the Emperor, in testimony of his gratitude, gave him a seat in that high chamber that was soon to disappear with imperial institutions. The preceding year he resigned his professorship. At the same time he tried to retire from that enervating work which he had endured so long. He was now 60 years old; his sight grew weak and his health began to fail. The surgeon acquires by strength of will the necessary *sang froid*, and a complete mastery of himself, without which he can do nothing. But in these noble efforts which do honor to the man, life oozes away from many wounds which are constantly renewed. However, events precipitated themselves. The day of the siege came. Nélaton desired to perform duty in the ambulance. This last effort broke down his health.

Cardiac disease, from which he was suffering, made rapid progress. His step became heavy, and an expression of languor and sadness had taken the place of the smile which formerly illuminated his face. Disturbances of the circulatory system were becoming more frequent. His visits became less and less. By unanimous vote, every year renewed, the physicians of the department of the Seine placed him at the head of their association. Although broken down by disease, he never ceased to coöperate in that brotherly work. Yielding to the solicitations of his relations and friends, he left Paris. But neither Italy, nor the sea, nor the air of the country could triumph over an incurable disease. On Sunday, September 21, 1873, he breathed his last, in the midst of his family, at the age of 66. His obsequies took place without pomp. No discourse was pronounced over his remains. This was his wish, and it was piously respected. Upon the hearse, which was surrounded by a sorrowing crowd, there was nothing to suggest the great dignitary of State, the academician or the professor. While they followed that modest coffin buried in flowers, the recollection of the eminent surgeon was involuntarily associated with one of the greatest French naturalists.

The surroundings were not those of luxury, but in a bare room, his hands chilled with misery, Michel Adanson requested, as the only decoration of his grave, a garland of flowers gathered from fifty-eight families of the vegetable kingdom he had differentiated—"a passing image," said Cuvier, "of the more durable monument which his own labors had erected for him."

Nélaton belonged to a hard working generation, for the most part passed away, worthy heir of the great surgeons of the beginning of this century, a cultured élite which had rendered many services to the profession, not the least of which

was the opening up of new paths still pursued by the surgeons of to-day. Experience is only acquired at the cost of many struggles. A stranger to all vulgar ambitions, not striving to eclipse any one, he had gained the esteem and affection of all.

He was already celebrated when his name became connected with the hero of Italian independence. In the succession of events which mark the course of life, the last are engraved most deeply in the memory. There are some whose written works stamp the names of their authors in the memory of generations. There are others, amongst the best, superior less by what they do than by what they are, more occupied in spreading truth by speech than by the pen, who seem to have worked more for their contemporaries than for posterity. From the past, what an amount of acquired knowledge has come into our possession, what varied discoveries—precious inheritance, whose origin is lost in the long ago, and which we spend without gratitude. Like those pieces of money whose figures have disappeared by long use, but which are still in circulation, without having lost their value. Do not forget that all real progress prepares the way for more. Science is an enchanting fugitive, of which it is said: "No one can seize it; it always allures us onwards, because it is always in advance of us."

EDITORIAL.

THE GERMAN MEDICAL STUDENT AND PHYSICAL DIAGNOSIS.

The medical schools of Germany rank so deservedly high that the desire naturally arises in us of the western world to know what manner of medical man is sent forth from these institutions of learning.

The key note of the whole matter was struck by a German physician, a graduate of the Friedrich Wilhelm University, at Berlin, but now practicing medicine in this country, when he gave us his impression of the difference between German and American doctors. As nearly as we can recall his words, he said: "In Germany, a physician must make a correct diagnosis, whether the patient gets well, or no; but, in this country, a practitioner does not seem to think it so necessary to make an accurate diagnosis, as to treat the patient to the best of his ability." This touches the very point of weakness in our system of medical instruction. German medical students are undeniably better prepared for their medical studies and more thoroughly drilled than are those in this country.

Favored with excellent instruction in all departments, they are particularly fortunate in the opportunities afforded them to become familiar with all methods and means of diagnosis. Not only is clinical material ample and completely under control, but the students are admirably prepared to utilize this material by a rigid course of instruction in normal and pathological anatomy. Moreover, instruction in diagnosis is not

imparted chiefly by didactic lectures, or by illustration on the part of the teacher; but it is intensely practical. Every man is given an opportunity to use his hands, as well as his eyes and ears, and thus he acquires considerable manipulative skill before entering upon the actual practice of his profession. In all departments of the "Polyclinic," whether of surgery, internal medicine, of the eye an ear, throat, or gynecology, the patients are turned over to the students for examination, who are then required to report their diagnoses to the instructor. Referring to a period in Munich devoted almost exclusively to physical diagnosis, we desire in this connection to emphasize the value of percussion and ausculation to the general practitioner, under almost all circumstances, and the need of bestowing greater attention upon the attainment of marked proficiency in this direction. We can not do better than to narrate how physical diagnosis is taught in the capital of Bavaria. At the opening of each semester, Professor Joseph Bauer organizes classes in physical diagnosis, dividing them according to the experience of their members. These classes meet the professor four times a week, and are then conducted into the hospital wards, where they are assigned, in groups of three or more, to each patient, being expected to examine the case as carefully as possible and to report their diagnosis to Dr. Bauer upon his return, at the close of the hour. After hearing the opinion of each student, he then goes over the case minutely, pointing out its peculiarities in detail. The class of diseases thus examined are not confined to affections of the thoracic viscera, but embrace all conditions in which skillful percussion and ausculation may be required. Particular stress is laid upon the exact mapping out of the various organs, healthy or diseased. This is an excellent discipline, the students being spurred on

by a double stimulus—desire to win the approbation of the professor, who is a diagnostician of acknowledged skill, and, on the other hand, a spirit of emulation between the students assigned to each case. Then, when the students advance a step higher and attend the medical clinics of Von Gietel or Von Ziemssen, their diagnostic skill is put to the test in a most admirable way. Von Gietel conducts his class into the wards, and selecting some "praktikant," as the men are called who take these practical courses, he requires him to examine a patient, explain his symptoms and suggest treatment, the student being expected thereafter to keep watch of the case. Ziemssen's method was different. Instead of giving his clinics in the wards, he has the patients wheeled on beds into the amphitheatre of the lecture room, within full view of all present. One of the "praktikanten" is then called down into the amphitheatre, and in conjunction with the master examines the patient, often having to endure a searching fire of questions. These quizzes are calculated to draw out all a man knows, and frequently summons the tell-tale blush of confessed ignorance into the scared face of some swaggering *medicus* who but a moment before looked puffed out with self-satisfaction. Ziemssen, whose name is so familiar to the medical profession of the civilized world, through his important contributions to medical knowledge in individual writings, and by his editorship of "Ziemssen's Cyclopedia of the Practice of Medicine," is a most happy clinical instructor, full of nervous activity, alive to every new discovery or suggestion in medicine, yet slow to adopt a novelty until having himself investigated and proven or disproved its merits. His delivery is easy and animated, while he is untiring in the illustration of his remarks, either upon the patient, the blackboard, or by plates and models. He is an adept in all means

of diagnosis. He neglects nothing, however trivial, that can throw light upon the case. He is as equally at home with the microscope and the litmus paper, the sphygmograph and the thermometer, the laryngoscope and the tongue depressor. He examines critically all excretions, and never omits to note any phenomenon or deviation from the normal standard, however apparently insignificant. But he lays special stress upon percussion and auscultation as a means of diagnosis, and never loses an opportunity to impress upon his listeners the importance of always making a careful examination of the chest, no matter whether disease of the thoracic organs be suspected or no, for, as he says, "It will often throw unexpected light upon the case, and render clear and definite a diagnosis which was before shrouded in obscurity."

If, then, a man of Ziemssen's experience and professional attainments considers it always necessary to carefully investigate the condition of his patients' internal organs, how much more essential is it for one of less extended experience! And it is exactly in this regard, as it appears to us, that our general practitioners are careless, if not actually incompetent. How common it is for the physician, when called to see a new case, to content himself with a superficial examination! He feels the skin and pulse, takes the temperature, perhaps, looks at the tongue, inquires as to the symptoms, asks a few questions concerning the bowels and digestion, and then prescribes, contenting himself and the family with some vague diagnosis, wherein he confounds a symptom with the cause, or but too often saddles the whole thing on to the shoulders of that much-abused scapegoat, malaria. Why is this? Is it from indolence? from an underestimate of the importance of a thorough physical examination? or from an inability to make such an examination? Doubtless all of these reasons exist. But we think,

as a rule, the last two really furnish the explanation of the too prevalent neglect in this country of adequate physical diagnosis. And, since that is so, the blame attaches not so much to the practitioner as to that system of medical training which failed to prepare him to appreciate the value of, and to skillfully employ, percussion and auscultation. How many institutions of medical instruction really afford their students adequate training in this direction? How many of the medical graduates go forth to practice, conscious of their ability to accurately diagnosticate diseases of the chest? Alas! but too few! Yet an assertion was made to us, last winter, by a physician of Chicago, to the effect that general practitioners have made such progress in the diagnosis of disease as to render specialists in diseases of the heart and lungs unnecessary. We daily learn of facts that teach another lesson. A lady recently complained because her physician, after making an examination over all her clothing, pronounced the apex of one lung to be indurated; whereas, it is needless to say, percussion of the bared chest brought out a normal vesicular resonance. In another instance, a practitioner mistook a superficial muscular dullness for high-pitched percussion note of pulmonary consolidation. We have in mind a case where the second stage of pneumonia was mistaken for a tuberculosis with the rapid disintegration of lung substance. Another, where the vicarious vesicular emphysema of a portion of a consolidated lung was mistaken for pneumo-thorax. And instances of inorganic cardiac lesions being pronounced organic are every-day occurrences. But why multiply examples? It is patent to candid minds that an improvement in this direction is called for. Our medical schools should adopt some system of teaching physical diagnosis which will compel every student to percuss and auscultate personally and not be satisfied with observing how it

is done. And before being granted his certificate of proficiency, he should be compelled to give the instructor in this department practical demonstration of his ability to diagnosticate cases set before him. And we respectfully submit this matter to the attentive consideration of our medical colleges. To the busy practitioner, who cannot return to an institution for further instruction, yet who feels his incompetency to detect obscure morbid conditions within the thorax, to such we recommend that henceforth he embrace every opportunity to percuss and auscultate the chests of his patients, whether healthy or diseased, and he will soon be surprised to perceive the degree of keenness which his ear will acquire, while his percussing finger will detect minute differences in the resistance of parts percussed, of which he never before dreamed. He will thus often be enabled to clear up cases which before would have baffled his limited diagnostic powers, and will find a degree of success attending his therapeutic measures that will convince him how important accurate diagnosis is to a clear-sighted, rational, successful treatment.

A COLLECTION OF CURIOSITIES.

The skill of the best diagnostician is, without question, a product of profound study, wide experience, and mastery of many of the innumerable problems of science. This, however, is not all that he requires. There is a chamber of curiosities which he should at times visit, in order to be periodically reminded that even the expert must possess a mental quality which is, perhaps, well described in our language by the familiar phrase, "common sense."

The collection of bric-a-brac in this apartment includes things new and old. Needless to describe, standing just with-

in its portal, the wax-figure of the doctor, in his rusty garments of antiquity, who first mistook a uterus containing a live fœtus for a malignant growth. Only a little less known is his vis-a-vis, the effigy of the famous imposter who, by simulating epilepsy, deceived half the profession in England!

The miscellaneous assortment of articles covering the long tables beyond are not the least valuable of the singular contents of this chamber. They have been responsible for obstinate disturbances and diseases of almost every system of the human body, full of mystery till their agency was explained either by accident or skill; and the professional reputations they have wrecked, no man can number. Here are peas, beans, and other small bodies from the vegetable kingdom; pieces of shells, and fragments of insects; pens, pencils and umbrella-ribs; parts of domestic utensils; and even candles and parts of candlesticks; with who can say what else beside! These have been thrust into the ears, noses, and flesh of innumerable men, women and children; stuffed under their eye-lids; rammed into vagina and uterus; insinuated into urethra and bladder; pushed into the rectum and colon; and even lodged in the umbilicus! Each can tell a sad tale of misguided humanity; each can teach a true lesson to the diagnostician. Here are the round dozen of small files taken from the stomach of a madman in Portugal; here is an entire beer-bottle removed from the bowel of a man in Massachusetts; here is the famous Hodge pessary turned out from the bladder of a woman in Illinois! Here, also, are curious concretions of animal matters which have occasioned no little suffering to the unfortunate people who secreted them, and have tripped up too many a good doctor who was summoned to cure their mischief. Here are scybala, scarcely less solid and bulky than cannon shot; caseous rings cast

about the glans penis, as firm as the rind of an ancient cheese; pellets of wax like bullets of lead!

The collection representing the animal kingdom is not without its objects of interest. Here are the larvæ of insects deposited beneath the skin; lice, whose incursions upon the human body have been responsible for many a "humor of the blood"—(poor abused human blood!)—fist-sized masses of inwoven lumbricoids that could deceive the very elect! Ah, what volumes would contain the learned opinions written on the diseases caused by these and their like, the only fault of all which was that neither writers nor readers ever guessed the real truth!

With every year this singular collection grows apace. With every venture of man's ingenuity to make life better worth living, there seems to spring a new source of disease, and hard by it yawns a new pit-fall for the diagnostician. Yonder, for example, are some rather new-looking retorts, containing gaseous emanations from sewers, that have been responsible for ever so many cases of "neurasthenia!" Who was it that lately told the secret that the curious Brazilian disease of the little toe, known there as "ainhum," was produced by tying a string about the diseased organ, under the influence of superstitions prevalent among the negroes of that country?

At the last meeting of the American Dermatological Association, two new contributions were made to this collection of curiosities. One was a ball of blue worsted, employed, innocently enough, by an old lady in knitting stockings, but yet two physicians thought she was suffering from a rare case of blue sweating under the eye-lids, till it was shown that her soiled fingers, applied to that part when irritated, had conveyed the coloring material to it from the worsted. Another was a red-bordered blanket, the edge of which, exposed be-

yond the sheets of the bed-clothing, had become responsible for the "syphilis" of the unfortunate youth who had slept in its folds and thereby received its aniline stain beneath his chin.

The very latest addition to the museum is contributed by Boston. At first sight one would assuredly not regard it as an object of suspicion. It is only a partially digested oyster. Yet this depraved bivalve lay in wait, like a wolf, for a wandering sheep of a diagnosis. Having obtained access to the stomach of a patient, it refused there to accomplish its destiny of digestion, and had itself thence incontinently regurgitated. On its travels to the upper world again, it found temporary lodging in a convenient tonsil at hand, that asked no questions and demanded no rent. When did a scurvy knave of the world ever fail to find an accomplice in his villainy! Being thus safely lodged, our errant oyster had himself arrested by two pathologists for a neoplasm, a malignant outgrowth from his tonsillar environment; but, his real character having been discovered, his carcase serves, as should those of all convicted rogues, to point an old, old moral, and to adorn a tale that can scarce be too often told.

LITERARY NOTE.

Messrs. Jansen, McClurg & Co., Chicago, have issued a new work, on the "Principles and Practice of Medicine," by Dr. N. S. Davis. The work is not a compilation, but an embodiment of the observations, thoughts, and experi. ences of the author during nearly fifty years of active medical practice. The matter is presented in the form of lectures, delivered by him during his many years of teaching. The features which especially commend the work to the prac-

titioner and student, are the fullness with which the clinical history of the various diseases is given, and the explicit and detailed description of the methods of treatment which have been found most effective. The author's adoption of the metric system of weights and measures is worthy of notice and commendation. Although this system has been advocated by leading scientific and medical societies, it has come into use only to a limited extent. To assist in effecting this change, Dr. Davis has used the metric system throughout the work—giving, however, in brackets, the equivalents in apothecaries' measure.

The volume is about the size of Bartholow's "Practice of Medicine," but more closely printed. The author is well known throughout the country as one of the ablest and most original thinkers in the profession, who has won a high reputation as a lecturer upon practical medicine; and the profession is to be congratulated upon having, in a permanent form, the rich results of his busy professional life.

BOOK REVIEWS.

DISEASES OF THE THROAT AND NOSE, INCLUDING THE PHARYNX, LARYNX, TRACHEA, ŒSOPHAGUS, NOSE, AND NASO-PHARYNX. *By* MORELL MACKENZIE, M.D., (*London*) *etc., etc. Volume II. Diseases of the Œsophagus, Nose, and Naso-Pharynx, with Index of Authors and Formulæ for Topical Remedies. Illustrated. Octavo, pp. vi., 550. Philadelphia:* P. BLAKESTON, SON & CO. *1884.*

The second volume for which the profession has been waiting several years. This volume treats of the Œsophagus, Nose, and Naso-pharynx. If there is any difference in the two volumes, it is in favor of the present one. The first portion of Volume II. relates to the disease of the Œsophagus.

The diseases of this organ have been little studied, and it consequently opens a comparatively new field.

In the opening chapter the author shows that the Œsophagoscope is not a plaything, but an instrument of utility, as he has shown that it can be successfully used in the majority of cases.

The chapters on Acute and Chronic Œsophagitis are very interesting, as they treat of diseases that are often overlooked. The other parts of the volume relate to the Nose and Naso-pharynx; they contain nothing particularly new, as it is with this organ that the specialist in this country has particularly to do.

This treatise should have a place in all physicians' libraries, and is also one of the best works for the student, on this subject.

Frank O. Stockton.

Lectures on the Principles and Practice of Medicine. *Delivered in Chicago Medical College, Medical Department of the Northwestern University, by* Nathan Smith Davis, A.M., M.D., L.L.D., *Dean of the Faculty and Professor of Principles and Practice of Medicine and Clinical Medicine in Chicago Medical College, etc., etc. 8vo., pp. x., 896. Chicago:* Jansen, McClurg & Co., 1884.

Davis's Principles and Practice of Medicine is one of a number of good books which have been issued by the American press during the present year. Owing to the prominent position of its author in the medical profession, and community, this book is destined to arouse an unusual degree of interest and provoke acrimonious criticism. Dr. Davis has acted wisely in embodying the views and modes of practice, developed during "fifty years of constant devotion to the study and practice of the healing art," in one volume of ninety-two lectures. The book is thus placed completely out of the pale of censorious criticism. Cavilers are at once disarmed, and the rules of criticism applicable to a systematic treatise on the theory and practice of medicine are unsuited to the review of the book under consideration. Then, too, by the adoption of the style of conversational lectures the book acquires an intensely practical character without losing in theoretical interest. Billroth adopted, with obvious advantage, a strictly similar method in the composition of his justly famous "Fifty Lectures on General Surgical Pathology and Therapy."

In Part First the elementary consideration or principles of

medicine are discussed in a clear, distinct, vigorous manner. *Vis medicatrix naturæ* receives appropriate and adequate recognition. The suggestions as to the examinations of the sick are of an eminently happy and practical character. The consideration of individual diseases is confined to Part Second. In the discussion of individual diseases, a concise history of each affection is narrated. Too much praise cannot be bestowed upon this feature of the treatment of the subject. Knowledge of the history of disease is necessary to adequate comprehension of medical science. For a long time this subject has been neglected by systematic American and English authors. This omission has not escaped the attention of German and French writers, whose frequent, pointed allusions in the recent International Medical Congress are known to every one.

The chapters on Etiology and Pathological Anatomy give evidence of critical study of most recent developments. Dr. Davis does not believe in the causative influence of "bacillus tuberculosis," or the comma bacillus. In this conviction he is thoroughly in accord with many, perhaps most, eminent clinicians. Morbid structural changes are sketched with as much attention to detail as the general plan of the book will permit.

The vivid pictures of individual diseases, in the chapters on symptomatology and diagnosis, resemble in force and vigor the faithful delineations of the late Doctor Geo. B. Wood.

Dr. Davis's views of treatment are well considered and rational. He is not skeptical as to the physiological action of drugs, and one's faith in therapeutics must be strengthened by a study of the book. The ninety-second chapter is devoted to the discussion of the therapeutic value of alcoholic liquids in the practice of medicine. The author's convictions upon this subject are so well-known that it is scarcely necessary to make the following quotation: "And whoever will boldly make the

trial will find that his patients, of every kind, will make better progress on good air and simple nourishment, without any admixture of alcoholic liquids, than they will with such addition."

Few practitioners will be found willing to accept such a *dictum* as settling a question still *sub judice*.

The incorporation of the metric system into the text of the volume marks an important departure from time-honored precedent. All embarrassment on the part of practitioners, educated to the exclusive use of the apothecaries' system, is obviated by the enclosure of equivalents in brackets.

The prominence given to current American medical literature, and to the consideration of the conditions influencing disease in North America,—while not impairing the symmetrical exposition of medical science, viewed absolutely,—adds vastly to the worth of the book for the American practitioner, and renders it unique in medical literature.

The book is not without faults. Errors in spelling and syntax are numerous. On page 13 the following sentence occurs: "To obviate these objections, and at the same time to add another important element to the comparison, I selected a good sized, healthy dog, and while stunned by a blow on the head, quickly opened the abdomen," etc., etc. From the construction of this sentence it is uncertain whether the sensibility of the operator, or of the dog, was benumbed.

These errors, however, are not vital, and do not influence the real value of the production. A careful revision of the book will eliminate them.

Finally, in recommending the book to students and practitioners, we have no hesitation in placing it among those "few" books, "to be chewed and digested," that is, "to be read wholly, and with diligence and attention." W. W. J.

THE NATIONAL DISPENSATORY. *Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines; including those recognized in the Pharmacopœias of the United States, Great Britain, and Germany, with Numerous References to the French Codex. By* ALFRED STILLE, M.D., L.L. D., *Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania, and* JOHN M. MAISCH, PHAR. D., *Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Third Edition, thoroughly revised, with numerous Additions. Three Hundred and Eleven Illustrations. Octavo, pp. xiv., 1755. Philadelphia:* HENRY C. LEA'S SON & CO. *1884. Chicago:* JANSEN, MCCLURG & CO. *1884.*

It was predicted in 1879, from *apriori* considerations, that the National Dispensatory would achieve brilliant success. With Professors Stille and Maisch—leaders in their respective professions of Medicine and Pharmacy, as authors, failure was difficult of conception. Two large editions have been rapidly exhausted in the brief period of five years! The authors and publishers could not have anticipated this cordial recognition of a practical book by practical men. The reviewer's task is a supererogation. The third edition of the National Dispensatory embodies the recent editions of the Pharmacopœias of four chief civilized Nations, the United States, the United Kingdom, Germany and France. The illustrations of the present edition—increased in number—are good, while the paper, type, binding, and general appearance of the volume reflect credit upon the intelligence, liberality, and business enterprise of the publishers. W. W. J.

THE FIELD OF DISEASE: A BOOK OF PREVENTIVE MEDICINE. *By* BENJAMIN WARD RICHARDSON, M.D., LL.D., F.R.S. *8 vo.,*

cloth, pp. 737. Philadelphia: Henry E. Lea's Son & Co. 1884. *Chicago:* Jansen, McClurg & Co.

As stated in the notice of the American publisher, this is the only work on preventive medicine accessible in the English language, and it is wisely written for, and addressed to, the public; for, as long as no provision exists for the reward of the prevention of any disease, although it may be now understood that the prevention of disease belongs to the function of the physician—still, the public finds it necessary to protect itself, and will find it necessary also to pay the services of its protectors even when they happen to be physicians.

No doubt the tendency on the part of the people in some sections of this country to employ family physicians by the year, gives the profession some facility for preventing a number of diseases by timely services; but this wise custom seems to decrease and to give place to the indiscriminate use of any medical man of any school, as emergency suggests. The role of preventive physician falls naturally to Boards of Health.

It is interesting to learn in the first chapter that there are: "*One thousand one hundred and forty-six* variations from health, making up the conditions and the phenomena of disease to which the human family, at this period of its civilization, may be subjected." But most of these are local affections; and of the 58 general diseases, 33 include the contagious and infectious, and 25 the great constitutional diseases.

The author's language, with a view to elucidate the text, contains many vulgarized scientific expressions, of which the following is an example: "If the body be exposed to agents which modify the vascular tension so that through the vessels the blood shall pass with undue friction, there may be an increase of fever which might be called *frictional fever*." Whether this frictional fever will come into favor amongst physicians, and

whether the "vascular tension" will be readily understood by the popular mind, remains to be seen.

The descriptions and definitions of the General Diseases are admirable for their terseness and clearness, and will be well understood by even illiterate readers.

The local diseases, on account of their variety, and for lack of a better classification than that commonly accepted, are not so satisfactorily described.

Medical readers will be surprised when looking at the paragraph on "*Membranous Croup*" to read that the disease "is not contagious," and that "it is considered as a local disease."

Of pneumonia, the author says that, "Essentially the disease is one, but various writers upon it speak of it as of different varieties." He omits to mention Croupous or Lobar Pneumonia, and says that the disease "is not contagious." Doubtless Dr. Richardson ought to read the article on Croupous Pneumonia, by Juergensen, in Ziemssen's Clyclopœdia, and many valuable reports on the subject by American writers.

Consumption is also treated of as a local affection ! ! Neurasthenia, of course, is not to be found in a work by an Englishman.

The Nomenclature of Mental (?) Diseases is restricted to Hypochondriasis, Mania, Melancholia, Dementia, Imbecility, and Idiocy, which occupy a little more than two pages.

Trichinosis is treated of as a local affection of the muscular system.

The third part of Book I. treats of Diseases from Natural Accidents, and contains much literature on medical topics rarely treated in ordinary works on Practice or Surgery.

Acquired Diseases from Inorganic and Organic Poisons form one of the most instructive and valuable parts.

Weather and Season as Causes of Disease have not been

omitted, nor a discussion of Zymotic Causes; but the subject of cadaveric alkaloids as a factor in the Germ Theory is too recent a discovery to deserve attention in these pages.

Part the Second of Book III., which ought to have formed the bulk of this volume, being "A Practical Summary of Preventions of Disease," occupies the sixty-eight pages preceding the index. A separate publication of these few pages would confer a service on the profession in general, and on medical students in particular, while it might also suffice for the wants of the laity, few of whom, at any rate, can intelligently read the rest of the volume.

This latter part can never be too highly extolled, and would surely redeem faults of other portions if it was as extensive as it is valuable. To sum up, this being the only work treating of Preventive Medicine, should have an extensive sale amongst all educated classess, and its unavoidable faults should be overlooked in view of the crude state of our pathological learning as taught to-day. However, a few years of medical progress, stimulated by our lately established boards of health, will probably bring about, even during this generation, the means of providing far better knowledge of disease for the people at large, if not better means of prevention than found in this work. H. D. V.

Legal Medicine, Vol. II. *Legitimacy, Abortion, Rape, Sodomy, Infanticide, Drowning, Hanging, Suffocation. By* Ch. Meymott Tidy. *Royal, 8vo., sheep, pp. xxiv., 508. Philadelphia:* Henry C. Lea's Son & Co. 1884.

We have had the pleasure of reviewing in the pages of the Journal the first volume of this work, as published in two separate volumes, by the firm of Wood & Co., of New York, and we must say that the firm of Lea, in issuing such a beautiful

edition, does credit to the value of this admirable work. A first glance at such a store of varied information, so rapidly issued, reminds one of Washington Irving's "The Art of Book Making," but the simile ends with this suggestion, for the wealth of information is probably surpassed by the interest of the style and the judgment of the author.

We cannot say more than what we expressed in the JOURNAL of October, 1883, regarding this work of Medical Jurisprudence. We think that it is supplying the want of many, and that it is fully up to the times, as far as English Law is concerned. H. D. V.

ILLUSTRATIONS OF THE INFLUENCE OF THE MIND UPON THE BODY IN HEALTH AND DISEASE, DESIGNED TO ELUCIDATE THE ACTION OF THE IMAGINATION. *By* DANIEL HACK TUKE, M.D., L.L.D., ETC. *Second American, from the second English Edition. 8 vo., cloth, pp. 482. Philadelphia:* HENRY C. LEA'S SON & CO. 1884. *Chicago:* S. A. MAXWELL & CO.

In this portly volume, Dr. Tuke, under the modest intention of giving a collection of authenticated facts, in which the imagination has worked wonders, for good and evil, in the human economy, enters into the mechanical laws by which such facts are produced, and gives what, to unbiased men, will appear a thorough explanation of the miracles performed of old by the Mystics and by the Spiritualists in our days. Nothing has been omitted, not even the rationale of *stigmatization.*

The large amount of interesting anecdotes may render this book popular with the profession, the educated classes, and even the commonest readers. This could not be the case if the philosophy of the subject had been more deeply inquired into, but such a treatment of the subject would not have given the

author as positive views as he derives from pure physiology, and to the majority of readers his explanations will appear, for that very reason, the most satisfactory.

The Psycho-Therapeutics, which are the outcome of the facts stated by the author, are worthy of careful study. In the use of doubtful agents, as electricity, for instance, it is sometimes imperative to give the patient the strongest hopes. Fear is not recommended as a safe agent. The strengthening of the will in hysteria will be beneficial. Systematic excitement of a definite expectation, direction of the attention to a particular region of the body, mesmerism, braidism, etc., have their range of utility, with some extrinsic value, and should be more generally known by physicians. This volume is neatly printed. It contains a few explanatory diagrams, and is highly interesting throughout. It is destined to eliminate many religious superstitions among the learned classes, and will contribute some sound information to the busy practitioner, but the quacks will, financially, make the most of it. H. D. V.

A Treatise on Bright's Disease of the Kidneys, its Pathology, Diagnosis and Treatment. *With Chapters on the Anatomy of the Kidney, Albuminuria, and Urinary Secretions. By* Henry B. Millard, M.D., A.M. *With numerous Original Illustrations. 8 vo., cloth, pp. xiv., 246. New York:* William Wood & Co. 1884.

A very modern book, which cannot be too highly recommended to medical students. Not incumbered with unnecessary details, not swollen by lengthy reports of cases, or the discussion of antiquated or doubtful modes of therapeutics, this manual would derive its best recommendations from its terseness and well selected material, were it not for the fact that it contains a large private experience on the part of the author,

and this will give it the rank of a valuable contribution to a class of diseases, which, but lately considered incurable, now turn out full of promise for the methodical, scientific practitioner. H. D. V.

Society Proceedings.

Chicago Medical Society. *Stated Meeting, 14th July, 1884. The President,* Dr. D. A. K. Steele, *in the chair.*

The meeting was well attended, the cases presented, and the papers read, of interest, but the crowded state of our columns compels us to abridge the secretary's report.

Dr. Franklin H. Martin read a paper on "A Successful Case of Abdominal Section for Pyo-Salpinx, Treated by Volkmann's Method." A brief report of this interesting and instructive case is appended.

Mrs. X, American, aged 29, weight 200 pounds, no children, but one three months miscarriage 4 years since, consulted me a year ago because of suspected pregnancy. She had many of the symptoms of pregnancy—pains in the breasts, morning sickness, enlargement of breasts and increased size of abdomen. She had flowed regularly, however, every month that pregnancy had been suspected. The ordinary digital examination was made at this time, but no decided diagnosis was made. I advised her to see me later, and in two months I made another examination, and with all the methods adopted was unable to satisfy myself as to the true condition. I at this time took her to Professor Byford, who, upon making an examination and hearing her history, which was at this time to the effect that she felt very decided fœtal movements together with the other characteristic symptoms, was inclined to pro-

nounce it a case of pregnancy. The woman had continued to flow scantily every month. Five months later I saw the patient, and, with Dr. R. W. Bishop, gave her ether and made a very thorough examination. By bimanual manipulation, through both vagina and rectum, the small, undeveloped uterus was found crowded close up behind the symphysis pubis, and inseparable from a large firm-walled tumor, about the size of a five-months pregnancy, occupying Douglas' *cul de sac*, and extending upwards nearly to the umbilicus. This tumor occupied a position a little to the left of the median line. Owing to the corpulency of the patient and the great thickness of the abdominal walls, it was impossible to make a positive diagnosis as to the character of the tumor. The probe was introduced into the uterus, and it measured 2½ inches. The patient was again taken to Professor Byford, and after careful examination he pronounced it a fibroid of the uterus. He, however, with commendable conservativeness, advised me not to be in a hurry to operate. Although the woman was suffering greatly from the pressure of the tumor upon the bladder and rectum, and intense backache and other reflex manifestations, I waited two months for further developments. At the end of that time, after laying before the patient the true condition of affairs, she was ready and anxious for an operation.

The 15th of May, therefore, assisted by Doctors R. W. Bishop, L. L. McArthur, E. L. Hollister, L. T. Potter, Stanley Black and T. H. Swayne, Doctor E. J. Doerning also being present, I proceeded by abdominal section to remove the tumor. All necessary antiseptic precautions attended to, an incision was made, about eight inches in length, through the abdominal wall, reaching from near the umbilicus to the symphysis pubis. The omentum was found firmly adherent to the tumor,—the adhesions covering a space of three or four inches

in diameter. The adhesions were ligated with cat-gut and carefully separated. It was now, after the omentum was separated, that I knew for the first time the true nature of the tumor. It was not a fibroid, but a large dilation of the fallopian tube of the left side. The walls were very thick and firm, and the tumor so generally adherent to the surrounding tissues that it would have been easy, even yet, to mistake it for a solid tumor. The sense of fluctuation was very indistinct, and only by introducing a needle of an aspirator was there no doubt left. The contents were pus. The tumor, upon further examination, was found to spring from the left horn of the uterus, and on the opposite side of its attachment to the uterus were the remains of the fimbriæ of the tube, and the ovary of the left side. The walls were of a muscular character, and very smooth. My intention was to remove this tumor entirely, clamping the small pedicle and attaching it in the inferior angle of the wound. But the tumor was found so universally adherent to the surrounding tissues that it was soon found impracticable to remove it with any reasonable hope of success. The intestines were firmly adherent upon almost its entire surface above, and the rectum was so closely adherent, that it seemed to be almost a part of the tumor. It was decided, therefore, after a short consultation, to resort to Volkmann's method of treating abscesses and similar tumors in other parts of the abdomen, viz: Stitching the walls of the tumor or abscess to the peritoneal edges of the abdominal wound and treating it, after union had taken place, as an external abscess. This was done in this case, the wound in the abdomen was closed as is usual, with the exception of the lower angle, where about three inches were left open. The tumor was stitched to the peritoneal edges of this open wound, so that when it was completed, about two inches in diameter of the upper surface of

the tumor was exposed, and the peritoneum was closed. The whole wound was dressed antiseptically. The fourth day following the operation, the wound was exposed and the tumor was found firmly adherent to the abdominal wound. A free incision was now made into the tumor and a large double half inch drainage tube introduced to the bottom of the abscess. More than a quart of healthy pus was extracted, and the cavity was thoroughly washed out with a two per cent. solution of carbolic acid, by means of a fountain syringe, and that in turn (to prevent carbolic acid poisoning) was followed by a saturated solution of thymol. The abscess cavity was washed out thoroughly night and morning after this with a sol. of corrosive sublimate (1 to 3000) and the external wound dressed with corrosive sublimate gauze (1 to 2000). The patient continued to do well with this treatment until May 25th, the ten days following the operation, when the temperature suddenly rose up to 102° F., and the following day to 103⅘°, the respirations were irregular and quick, and the pulse from 120 to 160.

At this time I called in Prof. Fenger in consultation. After a very careful examination of the patient, he decided that the lining of the abscess might possibly have taken on a change whereby it was absorbing pus and producing in that way the general constitutional disturbance. He recommended that the opening into the abscess be enlarged by blunt pressure, the inner surface of the walls be scraped with a dull curette and cauterized with a 20 per cent. solution of chloride of zinc. After the opening was enlarged, two fingers were introduced into the tumor and the abdominal cavity thoroughly searched by bimanual manipulation for any possible abscesses. A small abscess was found in the thick abdominal walls, and was opened and drained. The tumor was treated as recommended

by Prof. Fenger, a larger drainage tube introduced. The temperature immediately returned to normal after this procedure, and has remained so. The tumor has gradually contracted and atrophied, the drainage tube has been shortened and made smaller, as was indicated from time to time as the cavity grew smaller, and at the present time is practically eradicated.

Dr. Martin, after a full discussion of the case by Drs. J. H. Etheridge, H. P. Newman, A. H. Burr, and L. L. McArthur, answered inquiries, and closed the debate.

Dr. S. W. Wetmore read a paper on "*The Rational Treatment of Fracture of the Clavicle*," illustrating it by adjusting his appliances to an assistant. The writer presented nothing new, but gave good descriptions of the methods devised and practiced by Drs. E. M. Moore, of Rochester, N. Y., and Lewis A. Sayre, of New York, respectively, making judicious comments on their relative advantages and disadvantages. The paper elicited remarks from Drs. R. W. Bishop, C. E. Webster, W. L. Axford, D. A. K. Steele, A. B. Strong, L. H. Montgomery, and W. H. Curtis.

The remainder of the evening was occupied by Dr. Jefferson Bettman in the reading of a carefully prepared paper on "*Rhinolithiasis*," embodying an interesting case which had occurred under the observation of the writer.

After some remarks by Dr. F. O. Stockton, the Society adjourned.

Chicago Medical Society.—Stated meeting, August 4, 1884. The President, D. A. K. Steele, M. D., in the chair. Dr. J. H. Etheridge read a graphic historical account of the treatment of cholera. Phosphorus was extensively employed before this century. Sixty years ago, calomel, opium, and venesection were the important therapeutic agents. James Johnson, in his classical work on *Tropical Diseases*, published in 1824, says,

"Start the bile, then support the powers of life." In the epidemics of 1826–27, the new remedies were carbonic acid, hydrocyanic acid, nitro-muriatic acid, chloride of gold, chloride of sodium, oxygen, arnica, buchu, purgatives, boiling hot water, cold water, counter-irritants, actual cautery, and chlorine. The epidemic of 1832–34 was a terrible one, and the list of therapeutic agents is long. Acids of all kinds, alkalies, albumen, bandaging, hot air and sand baths, vapor baths, belladonna, bile, tobacco, sulphate of copper, coffee, electricity, horseradish, transfusion, the injection into the bladder of medicated solutions, were employed in the treatment of the disease. An infusion of horseradish, calomel, and opium gained much reputation. Ice-water, intravenous injections of salines, iron, juniperberry oil, lead, lime-water, intravenous injections of milk, alcohol, turpentine, strychnia, the ligature of the extremities, croton oil, abdominal tourniquet, are also mentioned.

In 1848, anæsthetics, arsenic, camphor, capsicum, carbon disulphide, gum powder, hydrotherapy, *Perkins's tractors*, and ergot, were, in turn, remedial agents. In 1854, alcohol, chloride of calcium, eupatorium, garlic, potassium permanganate, quassia, sugar, *vaccination*, and *hard cider* were popular remedies. It was during this epidemic that B. W. Richardson, of London, advised the injection of water into the peritoneal cavity. About this time the nervous system began to receive attention from pathologists, and the nervines were introduced. Nitrite of amyl, calabar bean, coca, spinal ice-bags, hypodermic injection of water, and the dosimetric system received the attention of the profession.

In 1873, sulphurous acid, antimony, chlor-alum, were added to the list.

Dr. I. N. Danforth then discussed the Pathology of Cholera. He said that every organ of the body was more or less affected,

but that pathologico-anatomical changes in the blood, intestinal walls, and kidneys were the three uniform lesions. The blood was thickened—sometimes to currant-jelly consistence—and contained microbes.

The intestinal villi were deprived of their epithelial covering, and Peyer's were enlarged. In the alvine discharges he had found, in 1873, epithelial cells, pus, blood, and microbes. Ziegler, Cornil and Ranvier, and Labarre (?) deny the existence of these epithelial cells in *ante-mortem* discharges. The arteries supplying the intestines were constricted, while the veins were greatly distended. The intestinal walls were, therefore, in a state of intense passive congestion. The kidneys presented the changes characteristic of acute fatty degeneration. The cortical glandular cells exhibited the fatty metamorphosis first. He agreed with Ziegler, Cornil and Ranvier, and Labarre (?) that the etiological relationship of Koch's microbe was not established. Dr. Danforth's remarks were well illustrated by drawings.

Dr. W. T. Belfield was called upon for information in relation to the Germ Theory of Cholera. He said that Dr. Robert Koch had found in the intestinal walls of cholera patients in India and Egypt a microbe recognizable by its size, form, and reaction to staining fluids. The microbe had not been found in any other tissue or organ. The constant association of this microbe with cholera was established. Its casual relationship was not proved. Koch had failed to produce cholera in dogs, rabbits, cats, and white rats, by the inoculation of the cultivated bacillus. He had seen the microbes in a rapidly multiplying condition in the intestinal walls. Until human animals were placed at the experimenter's disposal, Dr. Belfield was of the opinion that positive evidence as to the *rôle* played by the cholera bacillus would be lacking. In anthrax the etiological relationship

of the anthrax bacillus had been clearly proved. In no other affection had the inoculation of cultivated bacilli produced the respective disease.

As regards the natural history of Koch's cholera microbe, it flourishes in alkaline solutions of a low degree of saturation, while acid liquids are not tolerated. It must be remembered that choleraic discharges are not usually alkaline.

Dr. John Bartlett, a member of the committee of three appointed, in 1873, to investigate the pathology of cholera, made some interesting remarks with reference to the *rôle* of the cholera bacillus. In 1874 he was engaged in experiments with "Saulsbury's ague fungus." He had observed a fungus—a cell—in a developing fluid, aggregate about itself a crystalline body, tangible and in quantities—bearing the relationship to the fungus that coral bears to the coral insect. This crystalline body in time put forth buds, which were of a green color. Presently, from these green buds, a clear protoplasmic mass was developed, which gave origin to cells, each one of which resembled the cell observed in the first place. May there not be some stage in the development of the cholera microbe when it is invisible, and at the same time functionally active?

Dr. Charles Gilman Smith made an able speech on the Prophylaxis of Cholera. He believed that the disease was highly contagious, and was accordingly surprised to hear a woman with the experience of Florence Nightingale, pronounce against the theory. The epidemic of 1854, which he had witnessed, furnished evidence sufficient to convince him that the disease was contagious, and that it was propagated by the decomposed dejecta of cholera patients. Without denying the possibility of its origin *de novo*, he knew of no recorded cases of such character. The disease, once developed, follows the line of travel. This theory was sustained by the fact that cholera was unknown

in Australia. A thorough quarantine of ships and railroads should be instituted. Of the effectiveness of a thorough quarantine he had no doubt. In the last epidemic there was a cholera focus at Butterfield and Thirtieth streets, Chicago. The vigorous measures taken in removing the inhabitants and puri fying the premises had stamped out the disease.

As bearing upon the question of prophylaxis, a letter from Dr. John H. Rauch, Secretary of the State Board of Health, was read, of which the following extract is of interest:

The condition of the river, and especially of the South Fork, is a matter of the utmost importance to Chicago in the event of a cholera epidemic; and, indeed, at all times. Sixty thousand cubic feet per minute transferred from the river to the canal will keep the former clean and harmless; will prevent the possibility of pollution of the water supply at the crib; will affect sixty-six per cent. of the South Fork, and will so dilute the sewage as to make the canal unobjectionable to the communities along its banks. To secure this transfer requires two things:

1. That the pumps at Bridgeport be operated to their full capacity.

2. That the waters of the Desplaines River be prevented access to the South Fork through the Ogden Ditch.

If the Society can achieve this, it will render a most important service to Chicago, will help De Wolf in his arduous work, and earn the gratitude of one hundred and fifty miles of cities, towns, and hamlets along the canal and Illinois river.

Dr. N. S. Davis gave his experience in the epidemics of 1849, 1850, '52, '54, 1868, and 1873, on the Symptomatology and Treatment of Cholera.

Dr. Davis witnessed the epidemic of 1849 in New York city, and the others in Chicago. He did not believe in the germ-theory of the disease. In addition to an epidemic influence—whatever that might mean—there were three condi-

tions necessary to cholera, viz., a high temperature, a soil in at least a damp condition, and the presence of decomposing organic matter. He was sceptical as to the efficacy of any quarantine.

There was but one affection with which cholera could be confounded—cholera morbus. The differential diagnosis was usually not a difficult matter. In cholera, except in the height of an epidemic, there is a premonitory, painless diarrhœa, lasting from a few hours to several days. Accompanying this diarrhœa is a feeling of lassitude, weakness, general *malaise*. In cholera morbus there is no premonitory diarrhœa, but vomiting and purging occur at once, with great intestinal pain. Following the premonitory diarrhœa, in cholera, the patient complains of dizziness, and prickling sensations over the skin surface, and particularly in the extremities. Soon the patient vomits the stomachic contents; then he discharges by the mouth and anus the characteristic rice-water evacuations of cholera. After the first up and down movement, paroxysms of vomiting and purging recur every ten or twenty minutes. The amount of this choleraic discharge is very variable, but may measure half a gallon at a time. If set aside in a glass vessel, flocculi settle at the bottom of the vessel, and the turbid, supernatant fluid becomes clearer. This fluid is composed of the serous elements of the blood, epithelial scales, and bacteria. In a fatal case, the patient now literally withers; symptoms of intense, acute anæmia supervene; the skin surface is alternately bathed with cold perspiration and shrivelled up. The eyeballs shrink back into their sockets; the finger-nails are blue, the lips pallid; the tip of the nose is cold, like a dog's; the breath is distinctly cool. Intense painful cramps are felt and seen in all voluntary muscles. The muscles of the calves, thighs, and upper extremities are seized first. The

tongue is colorless, and the voice husky. The urine is entirely suppressed at an early stage of the disease.

In the height of an epidemic, the disease may run its course with frightful rapidity. In the epidemic of 1854, he had under his care a strong, healthy Scandinavian who, without any premonitory diarrhœa, was seized with serous vomiting and purging, and died three or four hours after the onset of the attack.

In cholera morbus, there is not this *ensemble* of the symptoms of acute anæmia, and the glandular secretions are not suppressed.

As regards treatment, he had few suggestions to make. In the premonitory stage, put the patient to bed at once—*when he is taken*—and treat as cholera morbus with the usual remedies when the patient commences to discharge by mouth and anus. Wait until the patient has become so exhausted by vomiting and purging that he can retch no longer, then put on the back of his tongue a powder containing one grain of calomel, one-sixth grain of morphia, and four or five grains of white sugar. He impressed upon his hearers the importance of doing this quickly, and said that it was folly to wait for stated periods to give medicines in such cases, for the chances were that a dose would be given first on the recurrence of the vomiting, and, therefore, no good would come. As an enema, he gave ten grains of acetate of lead and one-half grain of morphia, in two ounces of water, directly after a paroxysm of purging. Apply dry heat to the extremities; sinapisms alternately to belly and back. After reaction has occurred, give dilute solution of table salt and small quantities of coffee and milk.

The cramps were best treated by firm compression. Rubbing was of less value. When vomiting ceased, he had been in the

habit of giving, since 1849, small doses of the following mixture:

℞.—Carbolic acid.....gr. ¼
Tr. gelsemium.....♏ v
Paregoric.....f℥ ⅓
Water.....to f℥j.—M.

The thanks of the Society were tendered the venerable head of Mercy Hospital, and it was resolved to continue the discussion of the treatment of cholera at the meeting two weeks hence.

Regular meeting, August 18, 1884, D. A. K. Steele, M. D., President, and L. H. Montgomery, M. D., Secretary.

The first paper read was by Dr. P. C. Jensen, "On Cutaneous Therapeutics." After alluding to the histological and physiological relations of the skin and the internal secreting organs, including the mucous membranes, the writer discussed the question of cutaneous absorption, alluding to experiments in which limbs had been immersed in various solutions for weeks without any evidence of absorption. On the other hand, he quoted Bichat as authority for saying that when the cutaneous surface of a limb is immersed in putrid gases, absorption takes place, and the poison is subsequently eliminated by the bowels. He claimed that the rate and degree of absorption of any medicine depends largely upon its power of diffusion. Physiologically he regarded the skin as a "colloid septum, on one side of which lie the blood-vessels containing an alkaline fluid, while an acid is on the other side; a condition most favorable for osmosis." He quoted Waller to show that alkaloids dissolved in chloroform were readily absorbed from the cutaneous surface, while the same substances, dissolved in alcohol, were taken up very slowly or not at all.

He then gave systematically the objects and methods of local treatment in diseases of the skin, including a considerable number of formulæ, but which we must omit for want of space.

Dr. C. W. Earle read a short paper on the Management of the Summer Diseases of Children, of which we can give only the following conclusions:

1. The most frequent infantile disease in the city during the summer months is entero-colitis.

2. Excluding causes of infantile mortality largely beyond our control, improper feeding is one of the chief causes of the great number of deaths among this class.

3. Mothers should nurse their children. In lieu of this, a wet nurse should be procured. If this is impossible, a mixed diet is preferable, and, lastly, artificial diet must be resorted to.

4. Artificial foods containing considerable caseine are found to be a cause of indigestion and summer diseases.

5. In many cases cows' milk diluted with water does not seem to agree with children. Barley water, or rice water, as the diluent, seems to make a more physiological food.

6. Condensed milk seems to agree with a considerable number of children, but, in many cases, a sufficient quantity is not used to nourish a child. Used in proper quantities and diluted with rice or barley water, it is, without doubt, one of the best artificial foods.

7. Cream, mutton broth, and white of egg are valuable adjuvants to the dietary of infants.

8. Whatever the artificial food a child is having, the physician should examine frequently for evidences that it is a proper food as regards quality and quantity. The normal elevation of the fontanelles and increasing weight are among the conditions denoting a satisfactory and favorable nutrition.

The remainder of the evening was spent in discussing the subject suggested by the paper of Dr. Earle.

Stated meeting, 1st September, 1884, the President, Dr. D. A. K. Steele in the chair.

"Remarks on Aneurisms," by Dr. J. A. Robinson; "The Recent Treatment of Asiatic Cholera, as in vogue among European Surgeons of Late Years, in Southern India," by Dr. H. Martyn Scudder.

Dr. J. A. Robinson read a paper entitled, "Remarks on Aneurisms," and exhibited a specimen of an aneurism of the arch of the aorta, involving the aortic valves. The following abstract, which has been prepared by the secretary, we append. We omit the etiology, pathology, and diagnosis of aneurisms, and proceed to the general principles governing their treatment, which have been to prohibit the patient from taking much exercise, to secure, as nearly as possible, absolute rest, and to restrict the diet. Where the heart has been tumultuous, cardiac sedatives have been exhibited. Such symptoms as dyspnœa and pain have been met with appropriate palliatives. The first attempt at specific treatment for internal aneurisms was employed many years since by Albertini and Valsalva, and has been known as Valsalva's method. It consists in weakening the patient by repeated blood-lettings, and by gradually diminishing his meat and drink till only half a pound of pudding is taken morning and evening, with only a measured quantity of water; so that at last the patient is so exhausted he can not lift his hand from the bed in which he is ordered to lie from the commencement of the treatment. When this stage is reached, the amount of nutriment is increased until the patient's strength is restored. It is needless to say that this plan of treatment did not yield the beneficial results which were anticipated. In our day it would be regarded

as barbarous, were we to try and enforce it to the extreme which Valsalva reached. A modification of this treatment, consisting of enforcing absolute rest in bed, and diminishing the food and drink, so as to diminish the quantity, but not the physiological quality, of the blood, has benefited a number of cases, if not entirely cured them. While some physicians have refused to employ the depleting treatment, they have resorted to measures fully as severe. Dr. Murchison and Mr. Moore, of England, have recommended, and in one case tried, the introduction of fine wire into the aneurismal sac, on the theory that the large amount of surface exposed to the circulating fluid would produce coagulation of the fibrin. In the case referred to, they introduced twenty-six yards of fine iron wire into the aneurismal sac, and it is needless to say that the treatment was unsuccessful, although they contend that the result obtained demonstrated that the principle was sound, and that further experiments were justifiable. A much less dangerous, and probly more efficient mode of treatment is by electrolysis. Pravaz was the first to use electrolysis for reducing external aneurisms, and Cinicelli and others have applied it to internal aneurisms, but with very different results. Its employment has been extended to thoracic and abdominal aneurisms, but, in eight cases of thoracic aneurisms, only one was benefited, the other attempts being unsuccessful. Only one case of abdominal aneurism was cured, and this patient died from rupture of the sac, on account of premature exertion. The results obtained from the use of the galvano-puncture have not justified us in expecting to hope for much from that method. Professor Langenbeck has published accounts of two cases which he claimed to cure by hypodermic injections of one-half to three grains of Bonjean's watery extract of ergot every three days. Balfour says he has tried this method frequently, but

without any success, although he was positive that his ergot was active.

Pressure, as a mode of treatment, is wholly inapplicable to thoracic aneurisms, and rarely to abdominal. Dr. Murray records a case of abdominal aneurism in which pressure on the aorta for five hours, the patient being under chloroform, was successful.

We will now speak of the treatment of internal aneurisms by the administration of the iodide of potassium. It is conceded by Flint and Bramwell, and insisted on by Balfour, that the iodide of potassium is the only drug which offers any hope of cure, and that in every case it will relieve the distressing symptoms, if it does not effect a cure. Balfour says: "Of all the various modes of treating internal aneurism, there is not one hitherto mentioned which is not attended with considerable risk or danger, except Mr. Tufnell's plan of perfect rest, while the advantages to be derived from some of them are, to say the least, very problematical. But the treatment by the iodide of potassium, of which the author now writes, is perfectly safe and free from all risks, and it is equally certain to afford relief; at least no case has been yet found where relief was not attained, though, naturally enough, that relief is not always instantaneous, but requires the treatment to be continued for some time. It also relieves the pain and other symptoms of aneurism more rapidly and more effectually than any other treatment, apart, even from the powerful agency of the recumbent posture; and for the time it has been in use it has given greater and more permanent relief to a larger number of cases of aneurism than any other mode of treatment whatever. Indeed, the relief to the pain and other symptoms is so great and so speedily obtained, usually from the action of the drug alone, that it is often difficult to get the patient to sub-

mit to any restrictions; besides, it is not always necessary. The author has employed this method of treatment during the last eight years in a very considerable number of cases, with unvarying success, so far as the relief to symptoms is concerned, and with such favorable results as to retarding the farther progress of the case, and even, in some cases, promoting an apparent cure, as certainly to stamp this treatment as one of the most efficient hitherto propounded for the relief of this intractable complaint.

Balfour relates the history of twelve cases treated by this method, with the following results: The symptoms, such as pain, dyspnœa, etc., were relieved in every case; the physical signs of aneurism were diminished in seven cases; pulsation of the tumor ceased in two cases, diminished in four, and was not apparent from the commencement in six. The aneurismal tumor disappeared in three cases and diminished in five; the bruit disappeared in two cases and diminished in two cases, but never existed in two cases. Five of the patients were so relieved that they could work, four were discharged at their own request, feeling well, one patient absconded, and the result of treatment in his case is not known. Five cases were termed cured, and seven were not cured, but relieved. One of the twelve cases referred to was an aneurism of the innominate artery, which was cured, and Balfour claims to have cured several cases of aneurism of this artery. One of the four patients discharged at their own request was under treatment three different times, being discharged twice at his own request, but died suddenly while under the third course of treatment, the autopsy revealing an aneurism of the aorta, which had ruptured into the lower lobe of the right lung. One of the twelve cases was diagnosticated as a weeping aneurism, implicating the origin of the left carotid, and communicating by a small

opening with the left bronchus, the patient, on admission, expectorating arterial blood, but this soon ceased, and the patient was discharged cured. While the writer did not believe he was justified in being as enthusiastic in the praise of the iodide of potassium treatment as Balfour, he did believe he was justified in relating the following case, and giving the iodide of potassium the credit of prolonging the patient's life and making his life comparatively comfortable.

John H. C., aged 40, a blacksmith, was first seen in March, 1883. Had had attacks of inflammatory rheumatism several years ago. In February, 1883, was attacked with severe pains in the chest, in the præcordial region, and was treated by his physician for rheumatism for some weeks. Dr. J. P. Ross saw him and diagnosed aneurism of the aorta. At this time he had a good deal of dyspnœa, some hoarseness of the voice, and quite a little difficulty in swallowing solid food. When fatigued, the pains in his chest were excruciating. No tumor was perceptible, although there was pulsation in the upper sternal region and dullness upon percussion over the area of pulsation. Two months afterwards there was a swelling in the upper sternal region at the junction of the left first and second ribs, about the size of a silver dollar. A very slight bruit was heard. The voice was very husky, and the difficulty of deglutition had increased until now the patient could take no solid food whatever. He had emaciated, and was losing strength very rapidly. He was ordered to lie in bed continuously, and was given 15 grains of the iodide of potassium three times daily, gradually increasing the dose until signs of iodism appeared. It was truly remarkable how soon after this plan of treatment was inaugurated the patient expressed himself free from pain and the distressing symptoms from which he had suffered. He persevered this way until May, when he said he was so well and

weary of the bed he would like to sit up. Leave was granted. A few weeks after, the writer was surprised to see him walk into his office. The patient complained of nothing. He was cautioned against such experiments, and he was told to return home and take better care of himself. His condition at this date was as follows: The continued pulsation of the tumor against the chest-wall had produced absorption of a large portion of the manubrium and an inch of the inner portion of the left first and second ribs. Consequently there could be felt the pulsations of the tumor through the chest-walls at a point where only soft tissues intervened. No bruit was discernible. On laryngoscopic examination we found complete paralysis of the left vocal cord. His voice was anserinous. During all these months he had been taking the iodide of potassium without any disturbing effects, until now, when he complained of symptoms of iodism. He was permitted to discontinue its use. From the date of this office visit he grew rapidly worse. He rapidly emaciated, dyspnœa and dysphagia increased, and finally he died of asthenia, July 19, 1884, about 17 months after he began treatment.

Autopsy.—On opening the thorax a large aneurismal tumor was seen behind the sternum, about five inches in diameter. Friable adhesions of the sac to the sternum were broken up when the sternum was removed. Absorption of a large portion of the sternum and the left first and second ribs had taken place. Heart and pericardium were normal. Adhesions between the aneurismal sac and the left lung. The left lung was pressed upward and backward into the left plural cavity, and collapsed. On opening the heart the aortic valves found roughened. Extending the incision into the arch of the aorta, find it dilated, and at the anterior of the arch, between the origin of the innominate and the left carotid arteries, an opening, oval in form,

one inch by one inch and a half, into the sac of the aneurism. Through this opening the walls of the aorta were continuous, forming the wall of the aneurism. The tumor was firm, being composed of coagulated fibrine, and was then shown. Dr. Robison answered a number of informal inquiries relative to it, when Dr. John Bartlett cited briefly the history of a case of general chronic bronchitis and asthma, occurring in a man 70 years of age, who was supposed to be suffering from consumption for 50 years. Eight years ago, when the patient came under his observation, he ordered him to take eight grains of iodide of potassium three times a day. He has not omitted a day since to take the medicine, and he has steadily improved, his kidneys have performed their natural function, his appetite has not been impaired, and he has grown fatter and stronger. The case is an illustration how long a patient may take iodide of potassium continuously without injury to the mucous membrane of the stomach or injury to the kidneys.

These remarks were followed by the reading of a paper, entitled, "The Recent Treatment of Asiatic Cholera as in vogue among European Surgeons of late years in Southern India," by Dr. H. M. Scudder.

"I would not think of rising in the presence of so many of my seniors to give my views on the important subject of the treatment of cholera, if it had not been my fortune (or misfortune many might term it) to pass through four epidemics during my practice in India, where I labored for nine (9) years as a purely medical missionary. In the course of these epidemics I was called upon to treat a large number of cases, as I was at the head of a large hospital, supported by the English Government, and was the only European physician in a large town of nearly fifty thousand (50,000) inhabitants. During the famine of 1877 and 1878 I was placed in medical charge of a large relief camp, which frequently contained over five thousand (5,000) persons, and where I had two fairly trained

native doctors to assist me. In 1878 the cholera broke out in this relief camp and raged as an epidemic for several months; the number of deaths in the camp often exceeding fifty (50) per diem. As it is now almost time to adjourn, I shall only touch upon a few points, outlining the form of treatment pursued of late years by many of the surgeons in India. For purposes of treatment I would divide the course of the disease into the following stages: A prodromic stage, a stage of diarrhœa, a stage of invasion, a stage of collapse, and a stage of reaction.

"In the prodromic stage, manifested by malaise, chilliness, depression of spirits, nausea, and abdominal discomfort, give ten or fifteen-drop doses of spirits of camphor, in dessert-spoonfuls of hot brandy, but be very careful not to give any considerable quantity of stimulants. As soon as the stage of diarrhœa begins, the administration of some preparation of opium, together with aromatics of camphor and a little chloroform is called for. Two parts of chloroform to one of spirits of camphor, is a very good combination; thirty drops for a dose. To be repeated as required. An equally serviceable one consists of equal parts of spirits chloroform, spirits camphor, laudanum, aromatic tincture of rhubarb and tincture of ginger. Teaspoonful doses every hour or two, until four or five doses have been given. In alternation, also, with either of these, a mixture of aromatic sulphuric acid and tincture of opium may be given with benefit. As soon as frequent vomiting commences and the stage of invasion becomes established, these combinations containing opium had better be discontinued, and in their stead, simple mixtures of aromatics, chloroform and hydrocyanic acid be administered by the mouth, to check vomiting, and enemas of acetate of lead given per rectum, while at the same time we resort to the administration of morphine, or morphine combined with chloral hydrate, by hypodermic injection.

"The patient should be kept perfectly quiet, covered with heated blankets, and dry heat applied to the surface of the body, especially to the extremities, by means of hot bottles,

heated flat-irons, etc. The hypodermic use of morphine and chloral is, of course, contra-indicated when the stage of collapse has become well developed. During the stage of collapse it is essential that the patient be kept in the horizontal position. No violent rubbing should be allowed, but I have found it beneficial to gently rub the limbs and extremities with hot oil. *Very small* quantities of alcoholic stimulants are useful in this stage, but they should be given with great caution, lest vomiting should be provoked. Stimulant enemas may also be given.

"When the stomach is intolerant it is often better to inject small quantities hypodermically; experience teaches us, however, that anything like the free use of alcoholic stimulants is uncalled for and exceedingly harmful. I have sometimes found small doses of both atropia and strychnia, administered by hypodermic injection, apparently effectual in bringing about reaction. I have tried the intravenous administration of milk and salines in twenty-four cases, with only four recoveries. The reaction thus induced is generally not permanent, so I have been induced to abandon this method. I believe the impregnation of the air of the room with sulphurous acid by the burning of sulphur is a useful adjuvant in the treatment of cholera, and think it decreases the liability of the disease being propagated or contracted by the attendants. I see it is time for me to close, and will, therefore, not go into treatment of the stage of reaction and the further after treatment of the patient." In answer to a question, Dr. Scudder replied, "I consider that cholera is an infectious disease, and also somewhat contagious, though not highly contagious or readily communicable by personal association with the sick, as is the case with small pox or measles. The noxious power of the cholera germ, or virus (whether it is Dr. Koch's microbe or something else), seems to be more powerfully exerted some time after it has escaped from the body of the patient than when it is freshly passed. Careful observation and experience, the world over, seems to establish this fact. Whether the disease is contagious or highly contagious, however, seems still to be the vexed question, and remains

yet to be decided. My personal experience in four epidemics and the careful study of other Indian epidemics has led me to believe that the attendants and those who come into frequent and close contact with cholera patients are somewhat more apt to contract the disease than those who do not."

Dr. Scudder's paper elicited a lively discussion, in which Dr. John Bartlett, J. H. Etheridge, R. E. Starkweather, D. O'Shea, G. Newkirk, G. C. Paoli participated.

Dr. Scudder, in closing the debate, said, first, as to the per cent. of recoveries where the epidemic was severe, it was 20 or 30 per cent., or the percentage of deaths ranged from 80 to 90 per cent. where the epidemic was very severe. If the cases were seen early the fatality ranged from 40 to 50 per cent. In the sheds where cases were treated by fumes of sulphurous gas in the premises, nearly half the cases might be saved, whereas, in one shed in the relief camp, containing 20 cases, where exactly similar conditions were present, where fumigation was omitted, 80 per cent. died.

In India the natives would not drink well-water. Their religion was the cause of frequent visitations of cholera, for it taught them to drink only that which descended from heaven. The result was, they drank surface water, or that which was stored in tanks near the temples of Lateran, which they consider as sacred. In contrast to the natives of India were the Chinese and Japanese, because they drank well-water, and used the garbage and human offal to fructify the fields, and they were comparatively free from cholera. The Indians would not remove excrement and offal, neither did they cover it up, and when the rain descended, which amounted to 8 or 10 inches sometimes a night, the water became polluted. The speaker did not see that any benefits would be derived by people running away from a district in which cholera was epidemic. General panic predisposes to the disease, and fright

had much to do with its fatality. In India the poisoning of persons afflicted with cholera by arsenic was frequent, and is largely undetected by the police. To warn the community, as one gentleman has alluded to, is an extensive topic. If the early known methods of checking it were resorted to, cholera would not become epidemic. The Indians are greatly prejudiced against European medicines, but, singularly enough, not so with European surgery, presumably because there are no native surgeons in India.

No European would travel without a bottle of camphor, and the English are always provided with a flask of brandy. The Europeans are well up in the use of preventive measures, and they would be sure, also, to be provided with chlorodyne, which is no longer a secret remedy.

LISTON H. MONTGOMERY, M.D., *Sec'y.*

CHICAGO PATHOLOGICAL SOCIETY. *Feb. 11, 1884. Regular Meeting.*

The Society was called to order by the President, Dr. Angear.

The minutes of the two last meetings were read and approved.

Dr. J. D. Skeer was unanimously elected to membership.

The names of Dr. Sarah Millen, West Liberty, Iowa, and Dr. McCullough, of Randolph and Halsted streets, were proposed by Drs. Angear and Tebbetts.

Dr. E. L. Holmes was elected Censor, to serve the remainder of the year, vice Dr. Walker, resigned.

The Society then being in readiness for work, Dr. E. L. Holmes presented a specimen of melanotic sarcoma of the eye. Also a large melanotic sarcoma of the upper retro-tarsal fold of the left conjunctiva.

The first had been diagnosticated by an opthalmoscopic examination of the right eye of Mr. ——, forty-one years of age, who was in excellent health, and presented no external evidence of the slightest disease of the eye. At the outer and lower part of the globe was a dark mass, beneath the retina, extending into the vitreous.

The patient had discovered a loss of sight in a part of his field of vision about six weeks before this examination, which was made late in November. Seven weeks after this, the second stages in the development of such tumors had supervened. These were characterized by pain, redness of the conjunctiva, increased hardness of the globe, further detachment of the retina, and dilatation of the pupil.

Enucleation of the globe, which had been advised at the first, was no longer rejected by the patient.

Bisection of the globe revealed the base of the tumor, extending from near the ciliary region in front to within a quarter of an inch of the optic disc. Upon this base was situated a smaller but higher portion with abrupt walls, which projected half an inch toward the center of the globe; the remaining portion of the eye was filled with a thin dark brown fluid, and a very small remnant of vitreous humor.

These tumors are usually composed of small round or spindle cells, and are quite malignant. The average duration of life is said to be four years. The recurrence of the growth is more frequent in the liver, or other internal organs, than in the orbit. Dr. Holmes stated that he had known several patients who had lived in apparent good health longer than this period, after the enucleation.

Mr. T., a German, 66 years of age, recently consulted Dr. Holmes for an inflammation of the left eye. A careless examination and a careless eversion of the upper lid simply revealed

a chronic conjunctivitis, with considerable roughness ; this had existed a year.

A swelling of the upper lid had been observed during the last three months. By pressure on the upper portion of the lid, a large, black pedunculated tumor, three quarters of an inch in diameter, and a quarter of an inch thick, was made to protrude between the everted upper lid and globe.

By means of a ligature around the base of this growth, it could be drawn down in such a manner that its attachment to the conjunctiva at the retro-tarsal fold could be easily examined.

The conjunctiva thus tied and put upon the stretch by the ligature was readily divided so far from the tumor as to ensure apparently complete removal of all diseased tissue. The specimen shows a well defined tumor at its base, resting in the conjunctiva, without the slightest mutilation by the operation. Each tumor is rich in dark brown pigment Neither patient has a history of heredity.

The Society then proceeded to the discussion of "Therapeutics of Malarial Diseases."

Dr. E. L. Holmes opened the discussion by sketching the history of an obscure case of eye-trouble, caused by malaria, and cured by five-grain doses of quinine three times a day for two days.

Cases of tinnitus aurium had experienced no relief until large doses of quinine had been given.

Iritis simulates malarial eye trouble, but quinine, though often given, does no good.

The peculiarity about the pain in iritis is to come on about four in the morning. In all painful affections of the eye, where other remedies do but little good, give quinine.

Dr. Avery, continuing the discussion, stated that in certain

severe cases of conjunctivitis, when applications had not relieved, quinine would both relieve and cure.

Dr. Haven had employed quinine as a sheet-anchor. With insane patients in the Wisconsin district, where he once resided, an attack of malaria seemed to hasten an attack of periodical insanity, and curing malarial complications relieved mental difficulty. Combined Fowler's solution with quinine, also a cold bath to reduce the temperature.

Dr. A. Lagorio considered quinine the chief remedy; many try substitutes, but return to the former,

An Italian physician some time ago advocated lemon-juice in decoction. Dr. L. had tried it faithfully and found it influenced the disease, but has had to return to quinine to complete a cure.

In Italy, also, electricity is much in vogue; considered it good when combined with tonics and quinine. Oil of eucalyptus and piperin, they use these also. Cures frequently. The eucalyptus tree, planted in the Roman Campagna, has changed an entire district from a deadly, uninhabitable tract in 1868 to a healthy and valuable locality. There is less fever there than is commonly found in Italy. Dr. L. had used eucalyptus oil between the attacks. In a case of a man with a very large spleen, had given quinine and carbonate iron; spleen normal in two months.

Dr. Bucher stated that in four of cases pernicious remittent fever, in which quinine seemed perfectly useless, the hot pack alone had relieved.

In a case of asthma, in which nothing relieved, he gave five grains of quinine, with the patient easy in ten minutes, and subsequent attacks were always thus relieved.

Dextro-quinine in double doses produces no ringing and other bad effects.

Dr. E. H. Root confirmed the efficacy of the hot water pack in malarial disease. The president, Dr. Angear, in a few remarks as to the real nature of malarial disease, whether of nervous origin or caused by bacteria, etc., quoted Watson's early edition, in the matter of deception of the patient, as to time of day when expecting at a certain hour a chill, and his consequent cure without medication.

The discussion being brought to its final conclusion by the lateness of the hour, the society, on motion, adjourned.

J. H. TIBBETTS, *Secretary.*

Park Institute, Feb. 11, 1884.

March 10, 1884. Regular meeting.

The society was called to order by Dr. Avery, the president, Dr. Angear, being absent.

The minutes of the last meeting were read and approved.

The society then unanimously elected to membership Drs. Sarah Millen, W. Liberty, Ia., and Dr. McCullough, Chicago.

Dr. E. P. Murdock then reported an interesting case, and presented the specimen of a fœtus, 7th mo., with the following history: The labor was a normal one, together with the presentation, the afterbirth being extremely small, and no liquor amnii.

Examination of the fœtus showed a double hare-lip, there being no articulation between the maxillary and inter-maxillary bones, and a deficient articulation of the ethmoid with the frontal, the occipital bone being absent, and the cerebellum lying outside the skull. No family history could be obtained of any consequence; the mother, an Irish Canadian, age 24, had enjoyed good health, had not been frightened in any way. Father, a Norwegian of good family history. Parents are

usually able to assign some cause, imaginary or not, but not in this case. For years the subject of maternal impressions had been under discussion both among the laity and in the profession. Dr. Murdock, after many experiments upon eggs, painting, staining, varnishing, and placing them under peculiar conditions, had only negative results, and all authority was decisive that all such malformations as the one now shown are entirely independent of maternal impressions. The greatest number of abnormalities are found to occur in the brain and heart, especially in the lower orders of animals, where maternal impressions could not occur; sheep are frequently born headless, and monstrosities are of the most common occurrence in that family.

Among pigs the inter-maxillary bone is often deficient, and single-eyed pigs are very frequently seen.

In the human family duplex monsters are most frequent, and are never of opposite sex in any instance. Union of double monsters always extends to vital organs. In the Siamese twins the livers joined, and the abdominal cavities were directly connected.

In 1869, upon examination of Millie Christine, Dr. Murdock found the bodies joined at the tenth dorsal vertebra, the abdominal cavities united, one pelvic arch and four lower extremities; one set of arms, one vagina, and probably one uterus.

The proportion of sex in duplex monsters is largely the female, being four to one.

In monsters showing lack of development, that of the upper extremities is very common, and of the upper portion of the body in the median line.

In conclusion, Dr. Murdock spoke briefly of his great interest in the subject, and hoped to hear others speak of cases.

Dr. Campbell then reported a case which almost created a belief in maternal impressions, of a child born in normal labor, the pregnancy having also been normal, weighing at birth three and one half pounds, the head undeveloped, hair growing down to the eyes, which were closed, arms flexed, no hands, but rudimentary fingers on the wrists, toes webbed; it sucked and lived five months. The assigned cause of this montrosity as given by the mother was as follows: During the early part of pregnancy, while driving with her clergyman, who had a deformed arm similar in appearance to that of the monster, the horse ran away and frightened the lady, who sat rigid a long time, with arms flexed, watching the minister's hands.

Dr. Taggert thought that in all such cases no mother could tell where deformity would be; frights were of common occurrence in cities; marking must come in the ovum before impregnated, or in the spermatozoa.

Dr. Murdock then said that it was now established that the fœtus was wholly disconnected from the mother during gestation, and that the placenta was only a gland secreting vitalizing fluid. The child nurses through the umbilical cord in utero, and is no more liable to maternal impressions than a nursing child already born would be to the same impressions. There was no vascular connection between mother and child, no osmosis between the capillaries, but the placenta secretes fluid which nourishes the child. Shock and fright are afterthoughts, as stated by Dr. Taggert. Mothers almost universally expect deformity, or fear it, but such deformity is the rarest thing in the world. Nervous shocks may produce miscarriage, stopping development and throwing it off. There are no nerve filaments connecting child and mother. A lady had eight children, all deficient, and all had undeveloped bones in mesial line; all were still-born, or nearly so.

A man having had three wives all the children had extra thumbs, an excess of development.

Agassiz found in the embryo of fish a bifurcation which developed into two-tailed fish, an excess of development common in fishes. Their ova commonly show either deficient or excessive development, and in the spermatozoa of man deficiency of development has been noted by microscopic examination, but it would be impossible to prove that they would so develop.

Amalgamated races are more liable to deformity. In birds, while in their native state, no deformity can be found, and in 3600 specimens, prepared by the orator for the Smithsonian Institute, no deformity was observed, but in hybrid birds it is quite frequently met with, so much so that reproduction may become impossible.

Dr. Avery, in closing the discussion, expressed his interest in the specimen and cases reported. Peculiarities in the father, he had noticed, were frequently maintained among offspring. A gentleman in town has several boys, all of whom have very crooked little fingers, like the father, while the girls have not.

Dr. Murdock would inquire of the society in relation to certain cases seen lately in obstetric practice,—deep bilateral cervical lacerations. In one case, woman had pains forty-eight ours, examination showed no dilatation, but all subjective symptoms were present.

Dr. Avery asked his treatment in such cases. Reply, gave hypnotics, Battles' bromidia, viburnum, etc.

Dr. Taggert had one such case, lately, of bilateral laceration, in which false pains set in and stopped; he thought such cases were more apt to miscarry.

Dr. Murdock had not found laceration to interfere with impregnation; cervical catarrh, if present, should be relieved, then impregnation occurs; wished at some future time to have the subject brought up for consideration.

Dr. Avery thought that in very many cases of labor, false pains simulated impending labor.

Dr. Murdock replied that in all such cases he had found some injury, cervical, or otherwise.

Dr. Dobbin then reported a case with the following history: Last September was called to see a woman flowing freely, and had been, at intervals, for about seven months. The assigned cause was a fall, and a serous discharge preceded the hæmorrhage. On examination, found the os open enough to admit three fingers, and hæmorrhage free, with apparently some new growth in the cervical canal, though the examination was not a thorough one. After tamponing the vagina, the flowing ceased and the os was found nearly closed. The cervix was involved in a nodulated growth. There was no odor, but very intense pain. Emaciation was marked, but hæmorrhage remained slight. Dr. Byford, in consultation, advised ergot, and the hardened cervix seemed lately softer and smaller. The tumor surrounded the whole os, and was larger posteriorly. The body was normal in size.

Dr. Murdock thought the history indicated epithelioma; the odor being absent, did not exclude epithelioma.

Dr. Dobbin then stated that the case was so diagnosed by Dr. Byford, but thought the ergot was doing good.

Dr. Murdock thought that Dr. Byford was very enthusiastic on the subject of ergot; it might aid by cutting off the blood supply; he had found that iodized phenol gave the most relief from pain, iodine in carbolic acid, acting as a local anæsthetic.

A case seen at the Dispensary had the following history:

First seen, October, 1882; examination revealed a large intra-mural fibroid and several fibromata. Length of canal, five and one-half inches. The case was also seen by Dr. Jack-

son. The woman had been treated nine years without benefit. A marked peculiarity of the case was that there had been no menorrhagia, but considerable pain. Treated by acetate of ammonium, varied by iodide of potassium and ammonium.

The general system was attended to by tonics, etc., and the tumor had gradually grown smaller, until at present about the size of an orange.

Present, about twelve members and several visitors. The society, on motion, adjourned.

J. H. TEBBETS, *Secretary.*

A MEDICAL DEPARTMENT IN THE CHICAGO PUBLIC LIBRARY.

The Chicago Medical Society wishes to inform the profession that, through its efforts and those of physicians of Cook county, there are 1,200 bound volumes of medical books in the Chicago Public Library ready to be consulted by the profession.

The majority of these works have been recently purchased, and are, in fact, a carefully chosen collection of the best known *recent* medical authorities in English, French and German languages.

This is an initiatory movement toward founding a large medical library in the Northwest, a project in which the whole profession is assumed to take an active interest, and toward which subscriptions of books and money will be collected annually. Moderate yearly additions will soon build up a library in Chicago second only to that of the Surgeon General.

The first year's purchase has included most of standard works on the leading specialties (including dental surgery) and also some works on pharmacy. All these works have been donated outright to the library authorities and will be perpetually cared for and kept on reference by them.

The funds for the purchase consisted of an appropriation of $500 from the society treasury, supplemented by voluntary contributions from the physicians, dentists and druggists of Cook county.

Valuable gifts of old works were also received from some practitioners and deceased physicians' families.

Physicians will find this collection located in the southeast corner of the south room on the upper floor of the library building, where a large table and chairs have been provided for their convenience.

By agreement with Mr. Poole, the books will not be loaned out, but kept in the reference list for consultation, so as always to be found when required. The librarian of the upper floor will show the way to those desiring to consult the books.

There also will be found a good representation of foreign and American medical journals, which will be found catalogued at the librarians counter.

A large and valuable collection of old journals is not yet on the shelves, for lack of money to bind them. Most of these were presented by Dr. Vincent L. Hurlbut.

EDMUND ANDREWS, M. D.,
F. C. HOTZ, M. D.,
DAVID GRAHAM, M. D.,
Com. on Library Chi. Med. Soc.

CHICAGO, Ill., September 16, 1884.

To the Editors of the CHICAGO MEDICAL JOURNAL AND EXAMINER:

The Floating Hospital Association, in making their annual report, desire to thank those who have so generously provided the means for their summer work.

The first boat was sent out to the pier on Monday, July 7th, and the season was continued to and included Friday, September 12th, a period of ten weeks—the longest in our history; 21,489 persons were cared for during this time.

$1,761.71 have been received, $1.428.00 have been expended, $333.71 we have now on hand, which it is proposed to use in the purchase of new hammocks, and other necessaries, made imperative by the very decided increase in the attendance from year to year. It was feared at one time during the summer that we might not be able to go on, but the very liberal support given us by members of the Board of Trade and other constant friends, placed the matter beyond doubt. No accident of any kind occurred, and nothing has marred the success of the work. For ice and milk we are indebted, as we have always been, to the kindness of the respective dealers.

JOS. STOCKTON, President. C. L. RUTTER, Secretary.

List of Donations other than Cash, Season of 1884.—Coal, Robert Law; ice, Washington Ice Co., A. S. Piper & Co., E. A. Shedd & Co., H. P. Smith & Co.; crackers, for the whole season, H. H. Kohlsaat; milk, Kee & Chapell, J. J. Solon, William C. Hill, Duff Brothers, D. McCarthy, —— Fisher, W. Adams; sundries, Edwin Heywood.

CORRESPONDENCE.

LETTER FROM ITALY.

Messrs. Editors:—I take pleasure in sending for the benefit of your readers a brief report on cholera, which is everywhere about us. The cholera microbe, after bringing desolation, misery, and death to hundreds of peaceful homes in our neighboring cities of Toulon and Marseilles, has truly overleaped the quarantine, defied military cordons, and made its grand entrance upon our beautiful Riviera. Bravely have the Italian authorities fought against this germ, but in spite of their one hundred-ton Krupp guns, their two hundred and fifty thousand soldiers, their phenic acid, their chlorides, etc., they have lost the battle. Strict quarantines and plenty of fumigation have been of no avail; hundreds of our gay cities are infected by the epidemic; and even our beautiful Naples has succumbed; the last bulletin announcing to us the awful news that over five hundred were stricken down in this southern city alone, during the past twenty-four hours. What is it? What is the cause? What is to be done? is the general cry. A grand opportunity is offered for study and observation. The researches of Strauss and Roux (*Riv. Clin. e Terap.*) made in Toulon, have been a continuation of those instituted in Egypt last year with Thuiller and Nocard. From the first autopsy they have been enabled to confirm the identity of the lesions observed in the epidemic in Egypt. While there, Strauss and his collaborators attempted to find in the walls of the intes-

tines a specific microbe. Their method consisted in coloring fragments of intestines, hardened in alcohol, with a solution of blue methylene. They saw in the superficial portions of the mucous membrane several micro-organisms, in variable number. The bacilli were numerous and variable, in aspect and dimensions. It was impossible for them to draw any positive conclusions, from these anatomical results, as to the cause of the disease. In Toulon they again attempted to find a specific organism in the intestinal walls. According to Koch, the cholera was characterized in Egypt, as in India, by the constant presence of a characteristic bacillus in the mucous membrane of the small intestines. The new observations of Strauss and Roux, in Toulon, confirm those observed in Egypt. In rapidly fatal cases the organisms were found in less quantity, and in some it was impossible to observe any. In some of his communications from Calcutta, Koch gives more accurate details of the organism, which he believes to be the cause of cholera; he describes the bacillus as not straight, but more or less curved, at times comma-shape, or semicircular. To show this microbe, Koch does not use any special process of coloring; he takes a small part of a dejection or of intestinal mucous, and places it on a slide; this preparation is slightly warmed, and colored with an aqueous concentrated solution of aniline,—he prefers it to the blue methylene.

The intestinal contents, taken from a cadaver in the best of conditions, show, in the greatest number of cases, various species of micro-organisms, among which is found the comma-bacillus. Koch has made several culture experiments with this bacillus. A small portion of the intestinal contents is diluted with a few cubic centimeters of gelatine tea; this is poured on a slide and allowed to cool and thicken. Among the developed organisms there are some presenting the aspect of small

retracted pieces; they are formed by the comma-shaped organisms, which, under the microscope, seem to perform rapid movements. These organisms, during their vegetation, at times remain united by the ends, showing an S shape. Koch believes this subject of culture in the gelatine tea to be characteristic. The comma-bacillus needs an alkaline fluid for its development, and a temperature of 16° to 42° C.; a dessication of only a few hours destroys it. Now, can we believe this comma-shaped microbe to be the true organism of cholera? Not until we can produce the identical disease with the aid of these bacilli only. Koch supports his discovery by stating that this bacillus has never been found in a healthy body, nor in bodies dead from other diseases.

The members of Pasteur's Mission, in Egypt, discovered some extremely fine particles, suggesting an organism, in the blood of choleric patients. These are due to an alteration of the hæmoglobin.

According to Hayem, the following ought to be the therapeutics of cholera: For the premonitory diarrhœa, he advises opium; above all, hypodermic injections of morphine; the black sulphide of mercury, or the salicylate of bismuth; ice, etc., according to the case. During the stage of collapse there is only one indication: to replace the enormous loss of water and chloride of sodium ejected from the intestinal canal. He believes that there ought to be again experiments on a large scale, by the intravenous injections of distilled water, every 1000 grams containing 5 grams of chloride of sodium, 1 gram of hydrate of sodium, and 25 grams of sulphate of sodium.

This operation is called hypodermoclisis, and is at present largely tried in Naples, I am pleased to state, with the happiest results. The credit of this method of treatment is really due to Prof. Cantam, who describes it in his work on Thera-

peutics (Vol. I, page 115, 1867). His solution is as follows: 1000 grams of water, 4 grams of common salt, and 3 grams of carbonate of sodium. The temperature of the liquid to be injected ought to be that of the blood.

But very little being known positively as to the cause of cholera, Bouchut recommends a symptomatic treatment. If the patient be cold, he must be warmed; if he vomit, give the Riviere's potion, gaseous drinks, ice; if he have diarrhœa, give opium, astringents, acids, subnitrate of bismuth, etc. Those who believe that cholera is caused by special bacilli, use antiseptics, microbicides, and everything which is inspired by the parasitic theory of diseases. Ingeniously they believe that, the cholera poison being due to milliards and milliards of comma-bacilli in the intestines, it is necessary to give a few milligrams of the biniodide or bichloride of mercury; a few centigrams of sulphate of copper to destroy the cause, that is the parasite, and save the patient!

Before the invasion of cholera all this may be supported, but after the invasion, when the choleric fermentation has begun with all its alarming symptoms, it seems below the capacity of reasoning minds to pretend to be able to destroy the ferment in such a complex body as the human organism.

But as all diseases at present are zymotic and parasitic, our therapy is simplified and our materia medica limited to a notable degree. There is only one cause—the ferment or the zymosis; and one treatment — the anti-zymotic: mercury, iodine, carburets.

Besides this treatment of symptoms and that also of the intestinal poison producing the cholera, there is a third, which probably is not worth much more, it is that based upon the theory of the choleraic poisoning of the nervous system. When the cholera has progressed, there is noticed such a predomi-

nance of nervous accidents as to induce some to believe the disease to proceed under the influence of the pneumogastric nerve and the spinal medulla. The poisoning is rather cerebro-spinal than gastro-intestinal.

The uncontrollable vomiting is the effect of the pneumogastric trouble; the diarrhœa, the result of the sympathetic disturbance; and the cramps, a spinal phenomenon. The intestinal and gastric flux is but an effect of changes in the nervous supply of the intestines, and the bacilli there found are a consequence rather than a cause, and a *secondary phenomenon.*

The treatment, therefore, is not antiparasitic, but one which, acting on the cerebro-spinal system, can arrest the choleric discharge and its grave consequences. This treatment consists of hypodermic injections of morphine. Bouchut has used them in a young lady affected with cyanosis, cold, sunken eyes, vomiting, diarrhœa and albuminuria. Every evacuation was stopped with the injections, reaction was established and the cure was complete. In another case of sporadic cholera, only one injection given by Dr. Vattier was sufficient to decide the cure. This sort of treatment being rational, and with no risks, is highly recommended by Bouchut in the beginning of the disease; moreover, opium and laudanum when given internally may be vomited or not absorbed, while the injection of morphine is sure in its effects.

Trocin has made several experiments with the inhalations of oxygen in the Saint Mandrier Hospital in Toulon. In a number of cases the effects have been well marked; the pulse became stronger, the skin warmer, and the general aspect improved. These effects did not last long; and Dr. Rochard has not been able to announce any cures by this method of treatment. Further experiments ought to be instituted.

Luton urges hypodermic injections of a solution of a neutral

salt, preferring the ordinary sulphate of sodium. The introduction of this solution in a organism exhausted from the excessive colliquative discharges, has the effect of a sanguineous transfusion. Moreover, a substance of this nature is the best agent for harmonizing the gastro-intestinal functions, causing the peristaltic movements to be antagonized by the anti-peristaltic. It reëstablishes diuresis; and eliminates harmful matter which circulated in the blood.

Much at present is written of Ethiop's mineral as a prophylactic and remedy for cholera; and many are the pretenders for the honor of its first suggestion. But the credit is due to Socrates Cadet, Professor of Physiology in the University of Rome. It has been used since 1837, with splendid results, during the successive epidemics at Rome, Comarco, Paris, in Russia and in Tunis. Wherever used, the cures are said to amount to 70 to 90 % of those attacked. As a prophylactic it is given to adults in daily doses of twenty centigrams with a little sugar. In cases of attack, the dose is a gram and twenty centigrams. If it be vomited, the dose is repeated; and after the first dose sixty centigrams are given hourly until every choleraic symptom has disappeared. A physician asserts that during an epidemic in India, he used this remedy only, and obtained 78 to 82 per cent. of cures, and 96 per cent. in those who had used it as a prophylactic. Innumerable remedies are daily recommended and warranted, but, alas! after a few trials they are relegated to oblivion!

At the first outbreak of the epidemic in Italy, the government made a earnest appeal to physicians to volunteer their work and skill in suppressing the disease and in treating its victims. This appeal had very little effect, for few responded; but through the presidents of the several medical societies of the State, our physicians assured the government that they

were willing to risk their lives as sanitarians and citizens; but, before doing so, they asked for a law making them equal to officers of the army, so that if the government desired them to sacrifice their lives for the public health, it should assure them that their families would not have to suffer without receiving a suitable pension.

The government has not yet taken the matter in consideration, but it will be seriously discussed at the next Medical Congress, to be held in Turin about the end of this month. Our physicians, as to this question, are in the right.

A. LAGORIO, M. D.

Chiavari, Italy, Sept. 11th, 1884.

To the Editors of the CHICAGO MEDICAL JOURNAL AND EXAMINER:

Messrs. Editors: Many theories have been advanced by different authors on the essence of the febrile process, and the opinions of pathologists are yet much divided. The abnormal increase of temperature has been explained by a diminution in the dispersion of the animal heat (Traube); by an increase in the production of this heat; by a diminution in the dispersion, and increase in the production of heat existing contemporarily; and by extraordinary biochemical processes. (Murri).

The skin represents the principal and the most important regulating means of the animal heat, and the functional state of the cutaneous vessels, (on which depends the greater or less flow of blood to the periphery of the body,) is the one which regulates the dispersion of the heat.

All the different modern theories have recognized the alteration of the function of the cutaneous vessels to be the most

important factor in the production of fever; by Traube it was considered as the only and the primary factor capable of directly producing an increase of temperature of the body; other pathologists, differing from Traube, admit it to be only a consequence of the abnormal temperature, therefore of secondary importance only.

In consequence of the uncertainties yet existing in the doctrine of the febrile process, our knowledge of the mechanism of the action of the antipyretics is uncertain. Every hypothesis so far given, explaining how apyrexia is produced artificially by internal remedies, have been reached by analogy, from the physiological properties of remedies, rather than from their action on the febrile process.

The new remedy, kairine, has been largely tried and studied in the clinic of Professor Maragliano in the Pammatone Hospital in Genoa, not only as a febrifuge in general, but also as producing its effects on the cutaneous vessels and circulation. The experiments have been conducted and recorded by the professor's assistant, Gueirolo, a bright student and an accurate observer. The movements of the sanguineous vessels were studied with the pletigmograph of Professor Mosso. The instrument was placed on the forearm and the thermometer in the armpit, for a time varying from four to eight hours. Kairine was given to different patients affected with intermittent fever, croupous pneumonia, and typhoid fever, in doses of a gram every hour for two or three hours, and he was enabled to prove that with the lowering of the febrile temperature with kairine there is a dilatation of the peripheral vessels; that this dilatation precedes for a while the lowering of the temperature. That as the action of the kairine is exhausted, the fever reappears, and there is a constriction of the peripheral vessels; that this constriction precedes for a while the

increase of temperature, and is more rapid and energetic the more rapid is the rise of the temperature. These conclusions tend to prove that the constriction and the dilatation of the vessels are not secondary facts.

Antipirine is another new remedy largely used of late in this clinic as an antipyretic. It comes from Meister Lucius, of Frankfort-on-Main, in the form of prismatic crystals, very soluble in water, and in alcohol, less in ether. Its solution has a neutral reaction. The experiments as to its action on fever were conducted by the assistant, Ampuguani. In a dose of 50 centigr. given at one time it did not have much effect; but in doses of one gram the depression commenced after an hour of its giving, and increased in five to six consecutive hours to 3 degrees. At a dose of 1½ gram the lowering was notable and more rapid. In repeated doses, the antipyretic effects of the alkaloid last six to eighteen hours, and sometimes thirty-six to forty-eight hours. Many phthisical patients remained without fever from one to two days.

There is no doubt that antipirine has marked antipyretic properties; although its action is less energetic than kairine yet it possesses the value to last a longer time.

I take pleasure in communicating for the benefit of your readers, a few observations of Prof. DeRenzi on the comparative effects of some antifebrile remedies used in his clinic. In the fever of phthisis he has used kairine, phenate of soda, salicylate of soda, the salts of quinine, phenic acid, resorcine, and benzoic acid. Of these, he found that kairine has the power of lowering the temperature quicker and stronger; but this lowering is not lasting. The phenate of soda lowers the temperature, as the salicylate of soda, for a longer time; is tolerated better; and does not produce such abundant sweats as kairine; but the greatest diminution of temperature obtained with the

phenate of soda and the salicylate of soda is scarcely half of that obtained with kairine. The antifebrile power is more marked in the phenate than in the salicylate. The phenate is given in capsules containing 20 centigr. of the remedy. The dose of these is 6 to 16 a day. Of the salts of quinine, the arseniate has antipyretic effects superior to the sulphate. Benzoic acid and resorcin produced only slight lowering of temperature; the phenic acid, none.

For the fever of pleurisy the remedies generally used are: kairine, salts of quinine, and the phenate of soda. Kairine does not have much of an action. Better than this are the salts of quinine the arseniates gave the most marked effect. The sodic phenate has been, in this clinic, the most energetic remedy. In a case of high fever, rebellious to other remedies, this salt reduced rapidly the temperature; although kairine had been given at high doses (6 to 8 grams a day), and the sulph. of quinine (1.50 grams internally and ½ gram hypodermically), no change had been noticed. But the phenate of soda given for a few days (1 to 2.50 grams) entirely removed the fever.

Several antifebrile remedies have been urged in the treatment of typhoid fever and febriculæ. The cold pack always reduced the temperatures of 40 deg. centigr. to a normal state. In the febriculæ, quinine and salicylic acid were also used, but with little effect. For in almost all patients with typhoid fever the Professor adopted the carbolic acid spray at the bedside, in solution of 2 per cent., every hour. The efficacy of a carbolized atmosphere on the course of the fever was most evident. In several cases the fever was lowered; in others, it seemed that this method of treatment abbreviated the disease.

In pneumonias of an adnamic type, alcohol is always used. While this remedy supports the patient, it has also shown an

action on the temperature of the body. It was observed that in thirteen patients the temperature was kept lower than before the remedy was given. Quinine and kairine were given to lower rapidly and strongly the very high temperatures. The former, in doses of 2 grams, lowered the temperature, but always limited to about 1 degree; while kairine lowered the temperature 2 to 3 degrees. But this lowering with kairine is always transitory, the apyretic state lasting three to six hours.

For the malarial fevers, quinine, kairine and the electric current were used. The action of quinine has always been the surest and the most constant; kairine stopped definitely a fever of a quotidian type, in one case, in two days of treatment. The Faradic current showed a marked action.

The Faradic and galvanic currents were also used in two cases of symptomatic fever, of a catarrhal broncho-pneumonia, and of a pseudo-leukæmia, but with no effect whatever.

A. LAGORIO, M. D.

CHIAVARI, Italy, August 27, 1884.

THE CHICAGO
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ORIGINAL COMMUNICATIONS.

ARTICLE I.

RECENT CASES IN SURGICAL PRACTICE. *By* EDMUND ANDREWS, M. D., LL.D., *Professor of Clinical Surgery, Chicago Medical College, Medical Department, Northwestern University. Read Before the Chicago Medical Society, November 10, 1884.*

The following cases are of interest because of the numerous unsettled questions which cluster around the operations referred to:

Case 1. Gastrostomy.—I may say, by way of preface, that this barbarous word is an etymological blunder, so far as literary usages are concerned. It is considered bad scholarship to compound a new term partly of Greek and partly of Latin. The author of this philological monstrosity seems to have attempted to enlarge the word gastrotomy, which literally signifies stomach-cutting, by the addition of a syllable to signify a mouth, so as to make the compound mean a cutting of the stomach to make a mouth—literally a stomach-mouth-cutting.

Now, the syllables gastro, from the Greek *gaster*, signify stomach, and the termination, tomy, is from the Greek *tome*, signifying an incision; but the intermediate syllable, *os*, or mouth, is Latin, which mixture of languages is condemned by all scholars. The author of the word would perhaps say that *stoma* in Greek is mouth, and therefore gastro-stoma would signify stomach-mouth. This, also, is an error. *Stoma* in composition, always resumes the latent found in the oblique cases, so that the word should then be gastrostomaty, and even then there would be nothing left in the compound to signify the cutting. To express the full meaning of stomach-mouth-cutting would require the form *gastro-stomatomy*, a term whose length and harshness of sound is sufficient for its condemnation. After all, it is not necessary in naming an operation to introduce a syllable merely to express the motive of the operator in performing it. Let us go back to the well-known term gastrotomy, or else say simply the making of a gastric fistula; for, after all, a mere hole in the stomach is by no means a mouth, and ought not to be called one. Above all things, if we must air our learning by manufacturing Greek technical terms, let us see to it that they are scholarly in composition and euphonious in sound, two important requisites which have been constantly ignored by a class of pedantic surgical authors.

Case 1 was a child aged 6 years. She swallowed some concentrated lye some months before I saw her, cauterizing the lower part of the œsophugus, and gradually inducing a stricture. Dr. E. P. Cook, of Mendota, an eminent and well-known surgeon, dilated the stricture, and sent the child home greatly improved, but after leaving his care she relapsed, and he sent her to me. When she arrived she had been unable to swallow anything for a number of days. I tried dilatation, and she im-

proved for a time, regaining a partial power of swallowing liquid food. However, I found that I could not maintain the advantage gained, and after faithful trial it became evident that the patient was gradually starving. I therefore performed the so-called gastrostomy, or gastrotomy, if you prefer a scholarly term, in a room which had been sprayed for an hour with carbolic acid, but did not allow the spray to touch the peritoneum. Making the usual incision in the hypochondrium from near the xiphoid cartilage downward to the patient's left. I found the colon partly in the way, but pushing it downward, I drew out the stomach with long-toothed forceps, identified the viscus by the relations of the gastro-epiploic vein, and secured it to the abdominal wall by a long suture on each side. As I did not dare to let starvation go on several days longer, as recommended by some, I opened the stomach at once, and sewed the edges closely to the skin all around the incision. There was a good deal of shock, but reaction occurred. Union by first intention took place without difficulty and with no peritonitis. Peptonized food was regularly inserted, and on inspection, found perfectly digested except when meat was used. This whether raw or cooked, would be ejected from the wound unchanged, even when retained twenty-four hours. For some days the patient improved, but it soon became evident that most of the food, though digested, did not pass through the pylorus. It seemed that this orifice of the stomach required a little pressure to unfold it, and that whenever the stomach contracted for the purpose, the chyme escaped by the fistula into the dressings, and did not pass on into the intestines. A rubber pad, tight enough to stop the outflow, could not be tolerated. Dr. Wyllys Andrews therefore constructed a soft rubber valve, as follows: a rubber tube, having a thick circular flange at one end, an inch and a quarter in diameter, was pro-

vided with another similar rubber disk, perforated in the center, so that it could be slipped on over the tube. The terminal flange was now rolled up and inserted into the stomach, where it expanded into its disc-form again, the rest of the tube, of course, remaining outside. The perforated disk was then slipped on over the tube, and pushed down against the abdomen, pulling the inner disk well out against the inner wall of the stomach. Then, by clamping the tube outside of the outer disk, a perfect valve was obtained, which prevented leakage. I feared at first the effect of the inner disk on the walls of the stomach, but it produced no perceptible irritation. I purposely made the opening in the stomach pretty large, hoping at a future time to introduce my finger upward into the lower end of the œsophagus, and then by pushing down upon it a puncturing instrument with a guarded point, to restore the natural passage. The valve retained the food perfectly, and the patient took an abundance, and even learned to know when she was hungry and to call for her meals; but after a temporary improvement, she began slowly to fail, without obvious cause. The power of assimilation seemed gone, and she constantly grew weaker. By the thirty-fifth day after the operation it became evident that she was about at the end of her life. The last twenty-four hours were accompanied with an obscure fever.

Case 2.—An adult male patient. Six months ago, he swallowed some caustic ammonia, producing a contracting ulcer of the lower part of the œsophagus. In September last, he came to me, having been unable to swallow anything for some days. By a diligent use of bougies I dilated the stricture and restored the power to swallow liquid food. He then returned home, having learned the art of passing the bougie himself, and taking two instruments with him. However, he lost the art in some way, and in October returned again in the

same condition as before. I tried diligently to dilate the stricture a second time, but could gain nothing except a slight temporary power of passing small quantities of liquids a day or two at a time. After a week or two I perceived that his progress was downward, and that he was slowly starving. Moreover, the points of the bougies seemed to be creating a local inflammation in the right lung, as if they were making a false passage in that direction. I therefore desisted from their use, and determined to operate early and not allow the patient to become as weak as the previous one. The operation was the same as in the former case, except that the opening was smaller. The same difficulty of regurgitation of the food occurred and was controlled by a similar valve. The patient is now doing well, and bids fair to recover. It is now thirty-two days since the operation, and there has been no sign of peritonitis. The plan pursued by Mr. Howse, of London, is two insert two rows of sutures in a peculiar manner to hold the stomach. Both he and many other surgeons advise to attach the stomach to the wound first, and to postpone the actual opening of that viscus until some five days later, and then make only a small orifice. This has the advantages claimed for it, doubtless, but is subject to the obvious objection that the surgeon must operate on patients who have already advanced so far towards fatal starvation that five days more of it, will, in spite of nutrient enemata, turn the scale to the side of death. I think that the best plan, on the whole, would be to make the mechanical parts of the operation something after Howse's plan, which is a very careful one, and then at the same operation insert a moderate meal of milk and raw egg, through a small aspirator tube. This will give the patient something to live on, and if needful could be repeated once a day, by holding a point of the stomach wall in such a

manner that the insertion of the aspirator needle would not drag upon the stitches.

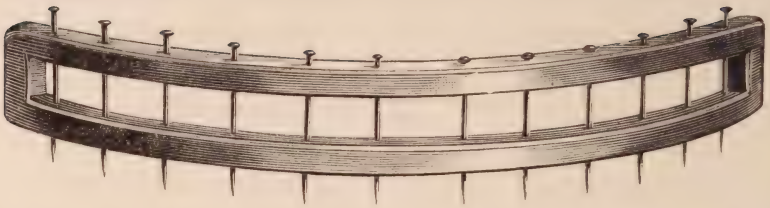
The statistics of this operation are not very cheerful. Of two hundred and seven cases recorded, forty were for cicatricial structure of the œsophagus, like those just detailed. Of these forty, twenty-one died, a mortality of more than half the patients; still, when they have no other hope of life, an operation which gives them one chance in two is a great benefit.

Excision of the Rectum.—I have at present two of these cases under treatment. Case first was epithelioma, not reaching down to the verge of the anus. I therefore saved the entire external sphincter. I have carried an incision from an inch in front of the anus back to the coccyx, opening the anus antero-posteriorly and cutting off the gut just above the verge. After dissecting it upward a little and tying numerous vessels, I separated the rectum from the pelvic chamber mainly with the finger, and divided the tube about three inches upward, just above the top of the cancer. There was no shock, and not much subsequent pain or inflammation. The second case was almost exactly a repetition of the first, except that the verge of the anus was involved in the disease, and consequently was dissected out with the rest. Both patients are doing well, and exceedingly comforatable, but it is too early to say whether there will be any return of the disease. Both of them should have applied for an operation at an earlier day. The statistics are much like those of epithelioma elsewhere. Billroth, of Vienna, thinks he permanently saves about one-third of the cases. Dr. Kelsey, in the *N. Y. Medical Record*, collected accounts of 608 cases, of which 140 died of the operation. Of those who survived the operation, one hundred were traced up. Thirty-one of the hundred were doing well at the end of one year, and seventeen were alive and well, with no return, at the end of three years.

Lithoaplaxy.—I have now operated by this method twenty-three times, with only one death. I feel confident that my plan of keeping the nerves of the bladder benumbed during the operation, by filling it with carbolized water, tends powerfully to prevent both shock and inflammation. It is worthy of inquiry whether the remarkable benumbing powers of the new agent, cocaine, would not enable us to operate both without ether and without shock.

New Instrument for Operating on Varicocele.—As the operations for destroying the veins in varicocele have produced occasional deaths, and in other cases ended in neuralgic scrotums, with or without atrophy of the testicle, many surgeons have followed the lead of Prof. Frank Hamilton, of New York, in preferring Sir Astley Cooper's plan of shortening the scrotum sufficiently to make it its own suspensory bag. Formerly this operation was vexatious, because the imperfect character of the old-fashioned adhesive plasters rendered it difficult to support the sutures sufficiently to secure a union by first intention. Now that we have the rubber plaster, which never lets go its grip, we can cut the scrotum very short, and still hold the wound firmly together, and secure a triumphant success.

Sundry clamps have been invented to hold the skin of the scrotum firmly while the surgeon cut it off and sewed it up. The evil of the clamp is that it compresses the arteries, so that after cutting away the pouch the surgeon is unable to find and ligate the vessels. If he sews up the wound without attending to this point, experience shows that after the clamp is removed, hemorrhage often takes place inside the scrotum, distending it with clot, and forcing open the wound, thus delaying the cure. To meet this difficulty, I have devised a kind of varicocele bow, which I here present. It consists of two curved steel



parallel bars, connected at the ends and enclosing a slot three-eighths of an inch wide between them. Twelve holes are drilled through the bars of a size to admit ordinary pins. The surgeon draws the scrotum through the slot to such a distance as he deems sufficient, and secures it there by inserting, one by one, as many pins as he finds necessary to hold the pouch securely. He then cuts off the scrotum outside the convex border of the bars. As the scrotum is not pinched by the instrument, the blood spouts freely, especially from the artery at the raphe, and the operator can carefully and deliberately secure every bleeding point. This being accomplished, he sews the cut edges together, and then drawing out the pins removes the bow and applies his plasters. The neatness and dispatch of the operation are thus greatly enhanced.

No. 6, Sixteenth Street, Chicago.

ARTICLE II.

THE MURIATE OF COCAINE—*A Clinical Lecture, by* DR. E. L. HOLMES, *at the Illinois Eye and Ear Infirmary.*

Gentlemen: — I wish to call your attention to the subject of local anæsthesia, produced by one of the active principles of South American tea. Although some of the physiological effects of this plant have been known to Europeans many years it is only quite recently that it was found to possess such remarkable properties — that the discovery must be regarded as one of the greatest in the medical history of the century.

It has been in use by laryngologists more or less for about a year. Its utility, however, seems to have made little impression upon the minds of these specialists, and much less on the minds of other practitioners.

About three months ago the discovery was made that a few drops of a two to four per cent. solution of the muriate of cocaine placed upon the conjunctiva and cornea produced in about ten minutes almost absolute anæsthesia of these tissues. Many of the most important operations have been performed upon the eye thus anæsthetized, with scarcely the slightest pain.

Important facts like these could not fail to attract the attention of the profession in every country of the world.

It is not necessary for me to dwell at this time on the medical history of the plant, nor the manner in which it has gained its high position in the list of very valuable remedies. You will find the general subject discussed in late works on Materia Medica, and the special application described in nearly all medical journals of the day.

Thus far, nearly all the reports are confined to the use of coca in ophthalmic surgery. It will probably have considerable

value in facilitating operations without ether or chloroform on the mucous membrane of nearly every portion of the body — and possibly of some value in otology, in general surgery and in dentistry.

I have myself performed three operations for secondary cataract, in each of which the patient was perfectly freed from pain. A very timid, nervous lady, from whose eye a large loose piece of thick capsule was drawn by means of a camelar forceps, submitted to the operation as quietly as she could have done under the influence of ether. She did not feel the grasp of the fixation forceps, nor did she experience pain in any step of the operation. The other patients were equally free from discomfort.

I have preferred to use the few grains, which I could obtain in attempting to relieve the pain, irritation, photophobia, lachrymation and spasm of the lids — often found in phlyctenular keratitis, superficial ulcerating of the cornea.

You have before you a young man with painful ulcerative keratitis and severe spasm of the orbicularis. Five drops of a four per cent. solution was instilled between the lids at intervals of two minutes. The severe symptoms were relieved at once, and under the influence of a couple of drops morning and evening have not returned at the end of three days. The patient can open his eye quite freely, even in strong light.

You perceive also another patient, whose left eye has been closed by spasm of the lids and ulcer of the cornea. The lachrymation has excoriated the integument around the lids. Relief was given by the treatment above described. The usual remedies are now rapidly reducing the conjunctival and corneal inflammation. I have applied the coca in four private cases, with most happy results. On the other hand, I present a patient whose very painful symptoms with lachrymation have

not been relieved. Possibly if the patient was placed under the influence of ether, so as to arrest the lachrymation, the solution of cocaine would be absorbed and produce the desired effect. It could then perhaps be continued with benefit.

I have recently wonderfully relieved the pain and irritation which sometimes supervene some days after extraction of cataract. Now four days have passed with no recurrence of the pain.

I am not so enthusiastic as to believe painful affections of the eye will be unknown. But one may indulge in enthusiasm over a discovery which I believe will render a large number of minor operations on the eye painless and some of the capital operations nearly so, and which will aid in relieving much distress in many diseases.

The cost of the remedy, which is now very great, will probably soon be much reduced, since there seems to be an almost exhaustless supply of the plant from which it is derived. If any observers have been disappointed, it is, I think because they have used a too weak solution. A drop of a solution composed of four grains to the drachm, instilled between the lids five times in the course of ten minutes, will ordinarily accomplish the desired result.

ARTICLE III.

ALBUMINURIA ASSOCIATED WITH HABITUAL USE OF OPIUM.

By F. P. MANN, M. D.

The following case may prove interesting, presenting, as it does, some features not often encountered in the routine of special practice.

Mrs. K., married, aged twenty-eight. Has one child, three years of age. Menstruation ceased eighteen months ago, unattended by usual symptoms of meno-pause, and up to present time she has experienced no inconvenience from suspended menstruation. About two years ago she commenced the use of opium, and has continued it daily,in gradually increasing doses, ever since. She now takes an ounce of Tinct. Opii, or its equivalent in morphine or tinct. opii camph. during twenty-four hours. When first visited, May 22nd, evening, her condition was as follows: Body well nourished. Face full. Pupils obstinately contracted. Temp. 101¼. Pulse 115. No œdema. Constant nausea and frequent vomiting. Vomiting commenced soon after swallowing about 4 oz. of paregoric. Bowels constipated at present, though generally regular, notwithstanding the habitual use of opium. Tenderness and dull pain when deep pressure is made over space occupied by right kidney; no pain or tenderness on left side. Tongue coated. Great restlessness. Urine, spec. grav. 1020, very acid; set aside for six hours gave large deposit of urates thickly sprinkled with crystals of uric acid. Coloring matter normal; 500 grs. tested for urea showed deficiency. A few drops of nitric acid added to urine freed from deposit, threw down precipitate of albumen equal in bulk to about one-third the quantity of urine tested. Corroborated by boiling test. Microscopical examination showed renal epithelium and a few hyaline casts. Patient, though occupying

a high social position, is demoralized by the use of opium. Before prescribing, I insisted that the bed should be made up, and to accomplish this, patient was placed upon a lounge. My object was to unearth any concealed bottles of laudanum, paregoric or morphine; none were found. A cataplasm of mustard and linseed, one part to two, was applied to epigastrium and covered with oiled silk, with directions to allow it to remain for twelve hours. Small pieces of ice to relieve thirst and nausea. Restlessness and desire for accustomed opiate controlled by twenty gr. doses chloral hydrate combined with potass. brom. 30 grs. in sol. every four hours until sleep was produced. Slept soundly after third dose, to be given in future only at night, and quantity gradually reduced as soon as condition of patient will admit of it. Cathartic exhibited, which moved the bowels freely. The urine was kept slightly alkaline by the following: Potass. bicarb., ℥iss.; acid benzoici, gr. i.; aq., ℥vi. Tablespoonful every four hours with one-third tumbler of water. Patient was carefully watched to prevent the possibility of procuring opium in any form. This treatment was pursued with slight variation for two weeks; at this time, albumen, which had been gradually diminishing in quantity, wholly disappeared. Care was taken before testing to render the urine slightly acid to avoid the possibility of any free alkali preventing the prompt precipitation of albumen. After twenty-one days all desire for opiates ceased, and but one dose of sedative mixture was required at night. The alkaline solution was continued for three months, and no return of albuminuria has occurred up to present time. Average specific grav., 1018 to 1020. No deposit of urates or uric acid. The sudden disappearance of albumen for days and weeks together during the progress of different forms of Bright's disease, is of common occurrence, and in the cirrhotic variety it may be absent, or present in

very small quantity, as in a case which I recently attended in consultation with Dr. Austin Flint, Sen., of New York, where repeated testing failed to show more than a trace of albumen, uræmic convulsions being the first symptom that attracted attention. In this case recovery seems assured, as patient appears in perfect healthat present time.

ARTICLE IV.

A CASE OF SEPARATION OF THE SYMPHYSIS PUBIS DURING LABOR.

By E. F. ELDRIDGE, M. D.

The 7th of March last I was called to see a Mrs. D., whom I found to be suffering from prolapse of the rectum. After some little difficulty, I succeeded in replacing the bowel, and as I had noticed that the patient had been unable to walk for some time without the aid of two canes, I took occasion to examine the condition of the pelvis. I found her pregnant, at nearly full term; the abdomen was enormously distended, the wall of the vagina relaxed and partially prolapsed, the symphysis pubis was separted three-quarters of an inch, and the bones at the sacro-iliac synchondrosis quite movable.

She told me that the inability to walk had gradually come on; that she could feel her hips move up and down when she stepped, and that she felt as though she was being pried apart. Attended her in her confinement, which took place a week later; the normal pains came on, and the contractions were strong and regular.

The presentation was normal and in the first position, but progress was slow, the labor lasting seven hours.

The child was a male, weighing 10½ pounds, and looked as though it was at least a month old; the head was large, the fontenells nearly closed and the skull remarkably ossified.

During the passage of the head through the outlet of the pelvis, the symphyses separated one and a quarter inches, so that I could place my two fingers between them.

She made a good recovery, the bones returned to their normal position, and finally united as firmly as before; locomotion is perfect. She told me that she was troubled the same way at her last confinement, but was not so bad.

EDITORIAL.

THE IODOFORM, INTRA-UTERINE TREATMENT DURING THE PUERPERIUM.

Dr. Emil Ehrendorfer has briefly sketched the iodoform, intra-uterine treatment, during the *puerperium*, in an interesting paper, appearing in the *Archiv für Gynækologie*, Bd. XXII., Heft I. The *Medical News* called attention to the Vienna method of the use of this agent. Vague allusions have, from time to time, appeared in other American medical journals, but the subject has excited little general interest. Certain it is, that the greater number of American obstetricians and gynecologists have no practical knowledge of this invaluable mode of therapy. We desire most earnestly to bring the subject before the profession.

Gynecologists, who believe in antiseptic midwifery at all, are prepared to accept the proposition, that irrigation of the uterine cavity with some antiseptic solution, irrespective of the reasons for operative interference, is indicated, after all procedures in which the *cavum uteri* has been invaded by the hand, or any instrument. In event of profuse ichorous secretion from the *endometrium*, irrigation of the uterine cavity, to be at all effective, must be frequently repeated. Frequent irrigation of the uterine cavity is contraindicated by the danger of trauma and sepsis, attendant upon repeated introductions of the uterine tube through the sensitive genital tract. Moreover, the plan is not feasible in private practice by

reason of the time and attention required from the physician himself. Under such conditions, the introduction of an iodoform *bacillus* within the uterine cavity fulfills a vital indication. The local action of iodoform cannot be regarded as definitely settled at the present time.

Certain investigators believe that it has no action in the direct destruction of microbes and animal poisons. All investigators, however, unite in the opinion that it offers an incongenial soil for conditions favoring decomposition.

The quantity of iodoform, which can be safely placed within the uterine cavity, is six grammes. König and others have demonstrated that iodoform toxæmia is an excessively rare occurrence in doses under ten grammes.

Kowalski has observed the physiological action of iodoform in 326 cases of various diseases, and in his own case. He concludes that a daily dose of six grammes of pure iodoform has no toxic effect. If, however, in a concrete case, toxic symptoms appear, it is an exceedingly simple matter to wash out the remaining iodoform, and limit the absorption. The *bacilli* are elongated, tent-like bodies, with an ampulla, corresponding to the *fundus*.

The prescription is as follows:

℞ Iodoformi pulv. 20.0
Gummi Arabici } .....
Glycerini ..... } ana 2.0
Amyli puri ..... } .....

F. bacilli nr. 3, longit. cm. 5–6.

In November, 1881, the iodoform, intra-uterine treatment during the *puerperium*, was instituted in the Lying-in wards of Carl Braun, Josef Spaeth, and Gastav Braun, Vienna General Hospital. The pathological conditions, under which the iodoform has been used, have been varied, and have presented every degree of severity. The verdict of three years' trial, in

a fabulous number of cases, is emphatic commendation of this method of treatment.

A "NO-CURE, NO-PAY" DECISION.

We clip the following from the Washington *Star*:

"A rather unusual case was submitted to Judge Hagner, in the Circuit Court, to-day. This was a suit to recover from Dr. W. H. Hale $100 paid him by a colored man named Meredith, under a guarantee of Hale that for that sum he would cure Meredith's son of pulmonary consumption, and in case he failed he would refund the money. The boy died, and Meredith sued Hale before a justice of the peace and obtained judgment. The case was reopened and judgment was given against Hale a second time, and he appealed. After the testimony of the parties was given this morning, Judge Hagner affirmed the judgment below. He declined to consider the defendant's bill in bar for attending Meredith's wife, and decided the case solely as to the original claim. Judge Hagner read the heading of Dr. Hale's circular—'Hearth and Home, sworn circulation 63,000 copies monthly'—and the signed guarantee to cure the son, and said this guarantee was to perform an impossibility—to reverse a decree of the Almighty—and was akin to gypsying and voudooism, which says: 'I dont't want your money, but as I must touch silver I must have it before I can succeed.' The justice was right in his decision that the money should be paid back, and this court affirms that decision."

The common law of contracts, applied in this case, resulting in the discomfiture of an advertising quack, reaffirms the status of the medical contract. If a physician agrees to cure a patient, and a consideration passes, the transaction becomes a contract, and the physician failing to perform his part, an action for recovery will lie.

BOOK REVIEWS.

TEXT BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. *By* JOHN J. REESE, M. D., *Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania. 8vo., pp. xii., 606. Philadelphia:* P. BLAKISTON, SON & CO., 1884.

For a long time the medical profession has been well supplied with excellent treatises on Toxicology and Jurisprudence, but among them there has been no work really suitable as a text book for American students.

The large works in French and German have either been inaccessible, or out of the question because of their size, and while in English, there has been no dearth of good material, it has not been in a form that could be used as a text book to accompany a course of lectures as given on this topic in our best schools.

Professor Reese has lately written a work which will fill out this gap in our literature, which, while not pretending to the completeness or thoroughness of such treatises as Woodman and Tidy's Forensic Medicine and Toxicology, or the author's own work on Toxicology, is yet full enough for the ordinary needs of the student, and covers the ground he should know.

That a medical practitioner should be acquainted with the details of toxical analysis is not to be expected, nor is it at all desirable, as this is a specialty which should be left to the most thoroughly trained chemists. But in relation to medical juris-

prudence and those parts of toxicology which pertain to diagnosis of poison cases, he stands in a somewhat different light, and time spent, in obtaining a good knowledge of this subject, is well spent.

Dr. Reese's book does not burden the subject with the minute points of chemical examination, but the information on other matters is as full and broad as could be expected in a college text book. Good paper and clear print are important points, which the publishers have not overlooked.

L.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. *By* FRANK HASTINGS HAMILTON, A.B., A.M., M.D., LL.D. *Late Professor of Surgery in Bellevue Hospital Medical College, and Surgeon to Bellevue Hospital, New York. Seventh American Edition, Revised and Improved. Octavo, pp. xxxi, 1005. Philadelphia:* HENRY C. LEA'S SON & CO. 1884.

Professor Hamilton's book is so widely and favorably known that the reviewer's task is easy. Observations drawn from more recent personal experience and a résumé of more lately recorded facts have resulted in a considerable enlargement of the size of the volume. As thus improved, we have no hesitation in pronouncing the book one of the best—if not the best—of its kind in the English language.

A MANUAL OF PHYSIOLOGY: A TEXT-BOOK FOR STUDENTS. *By* GERALD F. YEO, M.D. F.R.C.S. *Professor of Physiology in King's College, London. Octavo, pp. xxiv, 749 Philadelphia:* P. BLAKISTON, SON & CO. 1884.

Michæl Foster's text-book on physiology will meet no mean rival in the book before us. The style is vigorous, and the author expresses himself with an enviable degree of clear-

ness and distinctness. It not as complete a book as Foster's, but at the same time, better calculated to fulfill the part of an elementary treatise. Without the omission of important facts, great care has been taken to exclude doubtful and erroneous doctrines. The woodcuts are good and add materially to the value of the book. The chapter on bibliography is wanting. We commend Yeo's physiology to the medical student and practitioner alike.

ALLEN'S HUMAN ANATOMY: *Section V. Organs of Sense, Organs of Digestion, and Genito-Urinary Organs. By* HARRISON ALLEN, M.D., *Professor of Physiology in the University of Pennsylvania. Philadelphia:* HENRY C. LEA'S SON & CO. 1883.

Dr. Allen has given origin to a work on anatomy, which surpasses the high expectations of his professional friends, and completely fills a gap in American medical literature. Section V is a beautiful book. The descriptions in the text are clear, distinct and of an intensely practical character. Errors are few in number, and usually, of such trivial importance as to deserve no attention. Mr. Herman Faber is entitled to much praise for his faithful drawings of the author's exquisite dissections.

DOMESTIC CORRESPONDENCE.

COUNTY INSANE ASYLUM AFFAIRS. *The following communications explain themselves:* AN OPEN LETTER TO THE COMMISSIONERS OF COOK COUNTY, ILLINOIS.

CHICAGO, NOV. 7, 1884.

GENTLEMEN.—At the request of Doctors N. S. Davis, Oscar C. DeWolf, R. L. Rea and other physicians and for strictly medical reasons, I was appointed pathologist of the County Insane Asylum by your honorable Board in May, 1883.

You are aware of the amount of work I have done toward entering up the daily condition of the patients at the Asylum in the case books. The labor justified your giving me a clinical clerk to assist me.

Some of your number, whom I can name, are also aware that the work was made doubly hard for me by hostility on the part of prominent officials there.

You expressed your satisfaction with my efforts to render the treatment of the insane more humane and scientific by re-appointing me the following September, 1883.

I was enabled to furnish the medical journals with many articles on the discoveries I had made by personal examination of over one thousand cases and post-mortem work.

Of course medical men are the best judges of the value of that work.

The opposition to my researches increased in proportion as

they became more systematized, until finally I found every avenue for learning anything about the patients closed, and had no alternative but to remain in my laboratory.

I was nominated for the Superintendency of the Asylum and had strong assurances of election, but wrote to Commissioner Wasserman, who made the nomination, firmly declining the honor.

Dr. Kiernan was elected Superintendent, and his appointment was hailed in European and American medical circles as the beginning of a better state of things for the insane in America.

I was reappointed Sept., 1884, for the third time, as pathologist.

There seemed a prospect for the medical staff to make a name for itself, as every member was determined to attend strictly to medical matters and raise the standard of the Asylum to something near the reputation of similar institutions in Europe.

You are aware that the Warden, Engineer, and their employés are not in sympathy with the labors of the medical staff.

Your honorable body has been appealed to in various ways to institute a better state of things, but for some reason thus far no attention has been paid to the petitions sent to you.

Numerous threats have been made against the medical staff by the lay officers and employés, and especially against myself, particularly because I voted the Republican ticket at the last presidential election. The night of Wednesday following the election, I was roundly cursed by an employé, who is now defendant in an action for striking a female attendant. Threats were made against me by that person at Mr. Callahan's hotel, near the asylum, and within a few minutes after making these

threats a pistol was fired under my bed-room window, the ball breaking the pane and lodging in a book-case near which my wife was standing.

The object of this letter is to state my grievances and to ask you, if under the circumstances, you think best that I should resign because ruffians in the County employ refuse to let me work in peace; whether I should continue my work there while in imminent danger of losing my life; or whether I should be put to pecuniary loss by the stoppage of my salary while unable to continue the scientific work, to perform which I was three times appointed by you; or whether your honorable body can inquire into and remedy such irregularities.

Very respectfully,

S. V. CLEVENGER,

Special Pathologist Cook Co. Insane Asylum.

The Doctor says that the Board turned the matter over to the very committee which was responsible for all the trouble and opposition to the physicians.

CHICAGO, NOV. 14, 1884.

Committee of Public Charities of the Cook County Commissioners:

Inasmuch as Mr. Leyden and Mr. Hannigan of your committee have made threats against me, and as nearly all the difficulty at the Asylum has arisen from the Committee of Public Charities failing to aid the medical staff and its head in instituting reforms in the Asylum, and it appears plainly that said committee is hostile to the physicians and is carrying on what is known as a "whitewash" investigation, I decline to appear before it, having said all I have to say in my "Open Letter" to the Board.

My wife and son will testify to my room having been shot into by some one at a time when both Mr. Hannigan and James Lee, were on the County farm, and openly boasting of

what they proposed to do to the doctors, "particularly Dr. Clevenger."

I have read in the papers of false testimony having outweighed Dr. Kollar's honest statement before you, and expect no better treatment at your hands for any testimony I might bring forward.

S. V. CLEVENGER,
Special Pathologist Cook Co. Insane Asylum.

Realizing the inutility of prolonging a battle in which the odds were all against him, the doctor sent in this final communication:

CHICAGO, ILL., NOV. 17, 1884.

To the Board of Commissioners of Cook County, Ill.

GENTLEMEN: As the Medical Superintendent of the Cook County Insane Asylum expresses himself satisfied with the issue of the recent "investigation" by the Committee of Public Charities, and as I have no other object in view than to see that the insane in America shall be better taken care of than heretofore, I have the honor of submitting to you the following recommendations:

That my office of pathologist be abolished, and the saving be applied to increasing the salaries of the other physicians.

That medical matters at the Asylum be encouraged, and that politics should be rendered secondary thereto.

That all employés who come in such direct contact with the insane as supervisors and night watchmen, as well as all attendants, should be and remain under the exclusive control of the Medical Superintendent instead of the Warden, as is now the case.

That the assistant physician and the lady physician, who now receive $1,200 and $600 respectively, should be paid as well as the engineer, whose salary is $1,500 per year.

That the clinical clerk, who now is in receipt of only $28 per month, and who has both a classical and medical education, and the druggist, whose salary is $50 per month, should be both paid as well as the storekeeper ($70 per month), and placed in every respect as officials upon an equal footing. Even the cook and baker are better paid than these medical gentlemen.

That the Medical Superintendent be permitted to nominate to your honorable body:

One specialist in the treatment of eye and ear diseases;

One specialist in the treatment of skin diseases;

One specialist in the treatment of female diseases; (a lady physician by preference).

One specialist in the treatment of all cases requiring surgery.

Such specialists to be appointed by you, upon nomination as above mentioned, and to receive no salary for their services. Their actual railroad expenses only to be defrayed by the County, and to visit the Asylum at such times as the Medical Superintendent may suggest. Such specialists also being subject to removal, for proper reasons, by the Medical Superintendent.

That a male and female interne, to serve, each six months, without salary or other emolument, beyond board, washing and lodging, may, at the option of the Medical Superintendent, be appointed.

That the female Supervisor shall be selected from the training school of nurses, upon the recommendation of the Woman's Club of Chicago, but subject to removal, for cause, as other employés, and to be under the orders of the Medical Superintendent.

I calculate that all these much needed reforms will not increase expenses to the County more than from $500 to $1000

per annum, after deducting the gain through the extinction of my office.

I also believe that your concurrence in these reasonable suggestions will remove the horrible air of secrecy and prevent the recurrence of the inhumanities from which no Asylum is free.

As salary adjustments, for the following fiscal year of the Board, can only be arranged by your honorable body, upon its reorganization, I would respectfully suggest the laying over of full consideration of this communication until after December first, next.

In this, my final communication, I wish to express my sincere thanks to such Commissioners as have heartily coöperated with the medical staff in raising the standard of the Asylum, and to assure such that posterity will remember their names.

Very respectfully,

S. V. CLEVENGER,

Special Pathologist Cook Co. Insane Asylum.

THE PERPETUAL BATH.

Messrs. Editors:—The reading of your editorial in the August number of your valuable journal, reciting what is being done by Hebra and the perpetual bath, induces me to send you some notes of my own use of this agent during several years.

I am free to say that the knowledge of what Hebra had already done, aided me in the conception and in the execution.

Some account of my observations has already been published in the *St. Louis Medical and Surgical Journal*, in 1880 and 1881, after having been presented to the meeting of the Tri-State Medical Society, in Louisville, Nov., 1880.

Dr. Ferdinand Hebra (in his great work, "Diseases of the Skin," Vol. I, p. 320, New Sydenham Society edition,) speaks of having tried in three cases of burns, the perpetual bath at 90° to 100° F.

Accurate observations in his cases, written down from hour to hour, showed no marked change in pulse, respiration or temperature.

I. *The Perpetual Bath by Irrigation.*—N. B., aged 15, lacerated wound of fore arm, from a shot gun, March 12, 1873; entrance on the palmar surface, exit on the dorsal surface, leaving the olecranon process untouched, but displaying 7.5 centimeters (three inches) of the length of the ulna and lacerating the soft parts the length of 10 centimetres (4 inches). The anterior opening, powder burnt, was 19 millimetres (three-fourth inch) in diameter.

The wound was managed by placing it upon a splint slightly flexed, and applying every thirty minutes a solution of carbolic acid of the strength of about one per cent. There was not any redness along the lacerated margins of the wound at any time.

On the 27th day, slight hemorrhage occurred, and in the evening several spoonfuls. The bleeding artery was tied, and on exploring the wound a sharp pointed fragment of bone was found, which is supposed to have ulcerated in the ulnar artery. There never was any redness along the cutaneous margins during the whole progress of healing.

II. *Perpetual Immersion.*—W. B., aged 14. Forearm lacerated by a shot gun, the charge spending its force in comminuting the radius and the ulna, flattening the soft parts as the extensive laceration spread open (Nov. 24, 1879).

The forearm was kept in a small bath during 122 days, at a temperature of 37°–39° C. (99° to 101° F.), maintained by

an alcohol lamp, the flame of which was graduated to the effect desired. The water of the bath was medicated with carbolic acid, one part in one thousand, together with salicylic acid, one part in ten thousand.

On the 60th day, a small abscess was lanced under water. On the 63d day, the first muscular slough was detached—the muscular fibers beautifully macerated, and infiltrated with pus corpuscles and crystals of salicylic acid. On the 71st day, a small spiculum of bone, 37 millimetres long and 16 m. thick, was pulled away.

This piece of bone was entirely free from odor.

On the 112th day, there was the first detachment of dead skin, the adjoining living skin having at no time exhibited any redness.

On the 122d day, the limb was taken from the bath and the patient was permitted to sit up.

On the 143d day, a portion of the wad introduced by the discharge came away from near the elbow joint.

On the 183d day, a fragment of the ulna came away, about 10 m. in all its diameters.

The case recovered, with motion and sensation in all the fingers, to a limited extent. The tactile sensibility, at first entirely lost in the little finger, became partially restored.

Sixty-five Days in a Bath Tub.—W. N., aged 17, April 26, 1878, had been fourteen weeks under treatment on account of inflammation, involving extensive necrosis of both femur and tibia.

Very large bed sores had been developed, on account of which the patient was rested upon a canvas, stretched across a frame, and let down into a bath.

He liked this so well that it became his continuous bed. He ate, drank, slept and evacuated in the bath, and screamed

if an attempt was made to take him from the water. The temperature was maintained by the inflow of warm water, an equal outflow going on at the same time. Once a day the water was completely drawn out and the tub cleaned.

On the 19th day, the bed sores had become nearly healed.

Toward the last, his forces failed, and he finally died July 18th, having been sixty-five days in the bath.

This case is valuable as showing the friendliness of immersion to the progress of granulation and cicatrization.

The case furnishes encouragement for the employment of immersion in cases of severe lacerations, such as occur in railroad accidents.

With the employment of chloride of sodium, carbolic acid and salicylic acid in sufficiently weak solution, the fear of blood poisoning from the absorption of fluids in the incipient period of decomposition may be laid aside, and the disappearance of shock averted, for such amputations as may be necessary. It is at the same time a question whether or no this is the best management for shock.

Extrophy of the Bladder—The Employment of the Bath after the Operations.—Wm. St. John, of stout build and good general health, an opium eater, taking an ounce of laudanum at a time and ten ounces every day. Extrophy of the bladder and shortening of the penis with epispadias. Absence of the symphysis pubis and the pelvis spread, making the transverse diameter from the extended surface of one trochanter to that of the other 625 of a meter (26½ inches). The operation, Dec. 8th, 1874, was made according to the third method of John Wood, exposing a very large amount of raw surface. As the only purpose of this paper is to relate observations upon the use of the bath, it is not necessary to enter into details. (The case was published in the St. Louis *Medical and Surgical Journal*, November, 1881).

The first dressing of the wound was done on the 2nd day, in a large sitz-bath, and repeated each day in the bath; the patient being allowed to remain as long as he pleased, the temperature being regulated according to the sense of comfort.

The laudanum taken during the period varied from 120 to 180 cubic centimeters (4 to 6 ounces) a day. On the 10th day the patient was well enough to sing. On the 26th day the patient stood for a photograph. On the 42nd day an additional operation was made. The next day after this operation, the pulse was 116 and the temperature 38°,3+C. (101° F.), and at the end of thirty-six hours the patient had been thirty-two and a half hours in the bath.

The following table shows the time spent in the water on the days succeeding this; the comfort of the patient being the criterion of fitness:

3d day	18 hours	8th day	22 hours.
4th "	14 "	9th "	16 "
5th "	14 "	10th "	15 "
6th "	14 "	11th "	16 "
7th "	18 "	12th "	15 "

After this, the average time in the water was twelve hours, or from 9 A. M. to 7 P. M. When out of the water the wound was subject to a perpetual irrigation with weak carbolized water.

July 24th, or on the 75th day from the first, a third operation was made, and on the 27th, or the third day from the operation, he had been fifty hours in the bath.

March 22nd, or the 104th day, the fourth operation. This patient ultimately made a very satisfactory triumph of surgery.

It was found impossible to diminish the consumption of opium during the surgical treatment.

During a great portion of the treatment he took daily 4 c.c., (a drachm) of the tincture of chloride of iron combined with

66 c.c. (10 minims) of nitric acid. Quinine was given in various quantities during the whole period.

This case certainly indicates the employment of the bath after operations and injuries exposing a considerable amount of raw surface.

Another important occasion for the bath is the condition following lithotomy and other perineal sections. If the bath is employed as often and as long as the exudations and the flowing urine produce any irritation, there is pretty certainly a washing away of all material liable to go into septic decomposition.

The relief by opium is deceptive, permitting septic poison to enter without notice; but the relief by diluting and floating away decomposing material, adds to the element of comfort, that of safety.

One of the conditions most frequently demanding the treatment so successfully practiced in the case of St. John (just related) is that of puerperal patients suffering septic poisoning from decomposing material in contact with lacerations or within the interior of the uterus, which is in the physiological condition of a laceration, open to septic ingress.

In all private houses it is practicable to improvise a sitz-bath for the pelvic bath, or a full length bath for wounds and diseases of other parts of the body; and in all public institutions it is a wonder that there is not oftener the welcome sight of a bed and a bath-tub along side of each other.

If the patient is very helpless he can be easily lifted from the bed to the bath, and when sufficiently soothed by the contact of warm water, and the temperature brought to the degree of comfort, he can be lifted out again to receive the alternation according to the dictate of comfort.

Respectfully,

Jacksonville, Ill. DAVID PRINCE.

FOREIGN CORRESPONDENCE.

LETTER FROM DARMSTADT.

DARMSTADT, Oct. 6, 1884.

One can not go far or stay long in Germany without meeting some great medical light. There is scarcely a town of any size, even though it contain no university, that can not boast of some great teacher.

Having a day to spend here with my former pupil and friend, Dr. Fanny Dickinson, I was introduced to the celebrated Dr. Weber, the friend and peer of Von Graefe.

Here, in this quiet, sleepy town, lives this genius of our art, having no desire to go to the world, for the world comes to him. I was truly glad to know that in the midst of his great practice and his numerous researches he found the time and had the graciousness to patiently instruct a young American girl in his own incomparable methods. Doing this without seeming arrogance or condescension would, of itself, constitute a sign of greatness.

Although my visit was purely social, yet I did not fail to receive a great many scientific suggestions. As Darmstadt is likewise the home of Merck and his great laboratory, or "Fabrik," very many of the new alkaloids are sent to Dr. Weber for experiment. I found the Doctor in the midst of his experiments with "cocain," the alkaloid of "cocoa erythroxylon." The Doctor has found this to be more than a substitute for

atropine, in that, while it dilates the pupil equally well, it does not disturb the accommodation, and it also has an anæsthetic effect, so that the most serious operations about the eye may possibly be performed without the use of chloroform or ether. Dr. Weber informed me that while his experiments with the drug are by no means complete, he hopes to find in it an anæsthetic for general as well as ophthalmic surgery. He had injected a solution into his own arm, and found sensation completely obliterated below the point. He was as enthusiastic over all this as an English boy would be over a new bicycle! And while he talked I observed that the pupil of his right eye was much larger than that of the left. He explained that he had used cocain in both eyes, and then eserin in the left eye; hence the disparagement. I had no idea that my call would prove so much of a clinic!

Accidentally, the conversation turned upon apomorphin, and the Doctor informed me that he had found it a most excellent remedy in chronic asthma, and related a case of some thirty years' standing that had been permanently cured by the administration of one-twelfth grain three times daily, gradually increasing the dose to one-third grain. The result was obtained in about three weeks. The Doctor's brother, who is an obstetrician, had found the remedy very useful in rigid os—not interfering in the least with the normal contractions. My attention was likewise called to a new stethoscope, invented by Bazille, upon the principle of a cupping-glass. It consisted of one hard-rubber cup within another, so arranged that the air could be exhausted from the space between the two cups, thereby deadening all external sounds. The fault in the instrument is, that in cases of much emaciation it would be impossible to apply the cup; and yet these are the cases in which fine shades in diagnosis are seldom needed, for usually,

when there is great emaciation, the lesions are gross enough to be recognized without an instrument. It will certainly prove a valuable instrument in the incipient stages of lung diseases, and of still greater value in diseases of the heart.

But medicine is not the Doctor's only forte. He is well read in our best English authors, both literary and philosphic. He called my attention to a fine first-proof steel engraving of John Stuart Mill, presented to him by the Queen of England, and then showed me what he called his bible, which proved to be Mill's Logic. "This," he said, "I read the last thing at night and the first thing in the morning."

Through this genial genius, Dr. Weber, I was introduced to another as great a genius, in his way, and equally genial, Dr. Merck, of the Darmstadt alkaloid fame. He took us all through his great "fabrik," and explained most patiently and lucidly the various processes of preparing both the organic and inorganic substances. He called my attention to a new drug he was preparing from Helenium. This plant, as you remember, was named for Helen, wife of Menelaus, but which in our common English is known by the rare and euphonious name of "sneeze-weed." Alas for the classic Helen! Dr. Merck claims that this is an unparalleled remedy for the night-sweats of phthisis, but he could not at the time remember what physician had made the discovery.

And thus, one can not even visit in Germany without learning by the way; indeed, learning is in the very air, and it becomes a part of the respiratory process.

Begging your pardon for so much gossip, although pseudo-scientific, I have the honor to be,

Yours truly,

SARAH HACKETT STEVENSON.

From the Medical Clinics of PROF. REIGEL, *at Giessen, for Advancement in the Diagnosis of Acute Miliary Tuberculosis. By* DR. PROEBSTING, *in Lippstringe, formerly Clinical Assistant.*

Since their discovery, the bacilli of tuberculosis have been sought for and found in the secretions of most tuberculous organs, and through the examination for bacilli in the secretions an immeasurable service has been rendered to diagnosis.

Particularly in the tuberculous diseases of the urine excretory apparatus, the diagnosis was formerly sometimes not, sometimes first made in the later stages of the disease, and uncomplicated renal tuberculosis still remains *inter vitam* incapable of diagnosis.

A number of cases have already appeared in the literature of the profession[1] in which, through the examination of the urine for the bacilli of tuberculosis, a diagnosis of uro-genital tuberculosis has been made. In the cases reported, the question was always concerning a purely local affection.

It has come into my power here, to record a case of renal tuberculosis, with subsequent acute miliary tuberculosis, which in its clinical course contains some points of interest that perhaps may be interesting to all, since here the diagnosis, doubtful as to whether the case was typhoid fever or acute miliary tuberculosis, was first definitely ascertained after an examination for bacilli at a time when all direct symptoms of acute miliary tuberculosis were wanting. For the kindly commission of the history of this case to my care, I am under the

(1) Rosenstein, Centralblatt für die med. Wissenschaften, 1883, No. 5. M. Babes, Centralblatt für die med Wissenschaften, 1883, No. 9. Lichtheim Fortschritte der Medicin, 1883, No. 1. Kredel. Sitzungsberichte der med. Gesellschaft zu Giessen, Sitzung vom, 13 Marz, 1883. S. Berichte der oberrh. Ges. if. Natur und Heilkunde Band XVII. R. Singleton Schmidt, Lancet, 1883, No. 1, w. 2.

greatest obligations to my respected former chief, Prof. Riegel.

Katharine Schmidt, twelve years old, first appeared at the clinic July 2d, 1883.

Patient, formerly always healthy, was taken sick February 12th, 1883, on her way to school, with pain and stiffness in her left leg. The pain increased so that she was brought to the surgical clinic towards the end of March. Here the case was diagnosed as *coxitis sinistra*, and an extension apparatus applied.

After the patient had felt for some time entirely well again, she began, on July 1st, to vomit, to have a diarrhœa, and to fever. On this account she was brought to the medical clinic. Her parents had died some years before, cause unknown, and she had one elder sister, living and in good health.

On examination she seemed well nourished. Lungs entirely resonant on percussion. Respiration puerile, with the pulmonary apices entirely free from rales.

Heart normal. Frequency of pulse, 96.

Abdomen sunken. Skin without an exanthem. Epigastrium, on slight pressure, painful. Area of liver dullness, normal. Extremity of the pancreas palpable, and the organ enlarged. Left lower extremity in extension apparatus. *Trochanter major sinister* on pressure, and passive movements of left limb, painful. No œdema. Urine without albumen or sugar. Specific gravity, 1019.

Morning temperature, 37.8° C.; evening temperature, 28.2°C.

July 3d. Three thin fecal discharges. Morning temperature, 37.6°; evening temperature, 39.2°; pulse, 92–96.

July 4th. Diarrhœa has stopped. Morning temperature, 37.8°; evening temperature, 39.1°; pulse, 94–166.

July 6th. Enlargement of the pancreas has increased. No

roseola. No fecal discharge. Morning temperature, 37.8° ; evening temperature, 38.3° ; pulse, 96–104.

July 7th. Morning temperature, 37.6° ; evening temperature, 38.5° ; pulse, 90–92.

July 10th. Temperature remains as high as on former days, 37.8° ; evening temperature, 38,6°. Patient feels pretty well. Pancreas enlargement continues. No roseola. A daily fecal evacuation. Urine not abnormal.

July 12th. Temperature between 28.0° and 38.6° ; pulse, 102–104.

July 15th. Temperature since this morning almost normal. Patient feels well. Appetite increases rather slowly. The extended leg causes no complaint.

July 29th. Urine contains a trace of albumen ; otherwise *status idem.*

July 23. Subjectively no complaints. Temperature has not increased lately. Appetite very good. Nutritious diet readily digested. Pancreas enlargement remains unaltered. Urine again without albumen.

July 29th. Pancreas still enlarged as before. Strength of patient moderate. Recuperation very slow.

July 30th. To-day, for the first time, a rise again in the evening temperature to 38.2° C. Subjectively, vomiting ; considerable feebleness ; no complaint.

Aug. 3d. Morning temperature during last three days, 37.2° ; evening temperature up to 38.2° ; pulse, 96–112. Lungs normal. No cough. No diarrhœa. No roseola. Pancreas, as before, considerably enlarged. Urine normal.

Aug. 6th. Evening temperature continually higher. Urine again shows, on examination with ferro-cyanide of potassium and vinegar, a well marked cloudiness.

Aug. 8th. Temperature falls slowly to the normal ; this

evening, 37.4°; pulse, 102. Pancreas enlargement unchanged. Urine, yesterday and to-day, without albumen. Increased feebleness and emaciation. At the *os sacrum*, beginning decubitus (bed sores).

Aug. 9th. Urine exhibited again albumen; microscopically, its sediment shows the presence of epithelial cells, lymph corpuscles and detached hyaline casts.

Aug. 11. *Status idem.* Urine unchanged. On examination the sediment shows positively the presence of the bacilli of tuberculosis. In almost every specimen, groups of from two to six in a group are found.

Aug. 14th. Temperature normal continually. Health, in general, poor. Strength becomes more and more feeble. Less appetite. *Decubitus* at the *os sacrum* unchanged. Subjectively no complaints. No headache. No diarrhœa.

Aug. 16th. A little vomiting. A thin fecal evacuation. Patient very apathetic and non-complaining; only passive movements of the left limb cause expressions of pain. Pancreas enlargement and urine as before. On ophthalmoscopic examination a few yellow spots are observed in the retina.

August 17. Complete stupor. Feces and urine are voided involuntarily. Temperature, till to-day normal, rises to 38.2° Pulse strong, 92 beats. Respiration regular.

Aug. 19th. Unbroken somnolence. Proneness to vomiting. Convulsions. Cheyne-Stokes' respiration. Pulse slow but still full. Temperature 37.8°–38.3°.

Aug. 22d. After an increase of these symptoms, *exitus letalis* occurred to-day.

Post-mortem report of Aug. 23d (Dr. Wesener):

Corpse very much emaciated, with a greenish discolored abdomen, which is drawn in. Left lower extremity ca. 1 ctm. (one-third inch) shorter than the right. The epidermis of the

left lower extremity very dry, brownish discolored, and has large brownish bands.

Skull short and broad. Frontal suture still existing. Grooves for the blood-vessels very deep. *Dura* somewhat firm, not very well supplied with blood. *Pia*, firm (in its convex position), and soaked in a yellowish fluid, especially so at the *sulci*. On removing the brain a large quantity of yellow serous fluid was found. At the base the *pia* still richer in blood; moreover, at the floor of the third ventricle and over the *pons varolii*, it is steeped in a briny and turbid liquid. At the sinuses, likewise on the inferior surface of the cerebellum, were found a large number of grayish-yellow miliary tubercles. Both lateral ventricles were wide and contained a considerable quantity of turbid serous fluid. Brain substance moist, pulpy, well supplied with blood, only the gray matter somewhat pale. The third and fourth ventricles seemed similar to the lateral ventricles.

The diaphragm on the right side, at the lower border of the fourth rib; on the left side, at the upper border of the fourth rib.

After opening the thoracic cavity, the left lung sank back somewhat, and seemed only bound down to the walls of the thorax by slight adhesions. The right, on the other hand, is strongly adherent. Almost the whole pericardium lies exposed. It contains a small quantity of clear, yellowish serum.

Heart, strongly contracted, contained in both auricles, especially in the right one, a number of clots composed of red and white blood corpuscles in meshes of fibrin. Heart muscle pretty firm in texture, brownish-yellow. Valves intact.

Left lung, adherent in several places, together with the pleura covering it, presented considerable number of grayish red nodules. On making a section through it, it was found pretty

compact, pigmented, and to contain air. The upper lobe pale, the lower one somewhat richer in blood, and scattered through each a large number of gray nodules.

Right lung firmly adherent to the thoracic wall and the diaphragm; on exposing it, a few grayish nodules were discernible. On making a section the superior lobe, light red in color, with a number of paler spaces in different parts, contained air in its cells, and a large number of grayish-red nodules. Middle lobe similar to the upper one. The inferior lobe appeared tougher in structure, darker, contained less air in its cells, somewhat compressed, and contained, likewise, a large number of miliary nodules. Mucous membrane of the bronchi, reddish. Both lungs contained a large quantity of a frothy liquid.

Papillæ at the base of the tongue very prominent. Right tonsil somewhat enlarged; mucous membrane of the larynx and trachea without any other peculiarity.

Pancreas in close contact with the diaphragm, somewhat large, 12 ctm. long, 7 ctm. broad (five by three and one-third inches). On making a section through it, the follicles were pretty plain between them, as upon the capsule were scattered yellowish nodules. The stomach contained a greenish fluid; its mucous membrane was pale, without further peculiarity.

Liver, adherent to the anterior abdominal wall and diaphragm, presented upon its capsule a number of whitish nodules. On making a section through it, it appeared yellowish-gray-red in color, with the lobules not well marked, flabby in consistency, and interspersed in it were a large number of whitish and yellowish nodules.

Gall bladder was filled with dark bile.

Bladder was also well filled and adherent anteriorly and laterally to the pelvis.

The kidneys were removed, together with the reproductive organs and bladder. Mucous membrane of the bladder, at the urethral opening, strongly spotted, dark reddish in color, and contained a large number of whitish nodules.

Uterus about the size of that of a girl three to four years old; showed otherwise nothing of interest. Ovaries without any peculiarity.

Right kidney flabby; showed on its anterior surface injected *stellulæ* and a number of whitish points. On making a section through it, the cortical substance appeared pale and yellowish-red.

Medullary substance dark, especially at the borders of the pyramids; besides this, there are a large number of nodules of a caseous character in the cortical and medullary portions. In the left kidney these changes are more strongly pronounced. Here a number of pyramids have already undergone caseous degeneration.

The internal surfaces of the uterus show no alteration.

Mucous membrane of the small intestines, pale, in its lower portion only more reddish. Close to the valve (ileo-cæcal) a caseous follicle, and also a thickened blackish spot containing small whitish nodules.

In the *process. vermif.* an *ascaris.* Mesenteric glands unaltered.

On opening the acetabular cavity, a thick greenish-yellow pus was discharged. The cavity itself was in an advanced stage of destruction. The cartilage had been destroyed in two places; in one, the cavity formed was about the size of a cherry pit; in the other, the size of a five cent piece, so that the acetabulum looked like a dark grayish, discolored mass of bone. The cartilage remaining was yellow opaque, and could readily be peeled off and broken. The head of the femur was

still covered with cartilage, though it fitted loosely in the cavity, and had already assumed a necrotic appearance. The spongy substance of the head and neck was dark red in color, very soft and frangible. Just below its cartilage there was a caseous mass about the size of a cherry pit.

In the choroid coat of the left eye, posteriorly, were found a number of yellowish-white nodules.

At the thoracic duct, nothing of especial interest.

Anatomical diagnosis: *Tuberculosis miliaris acutis.* Coxitis tuberc. sin. Tuberculosis renum et vesicæ.(2) *Tubercula disseminata pulmonum. Meningitis acuta tuberculosa. Hydrocephalus internus. Tubercula lienis et hepatis et chorodiæ sin.*

This case presented for diagnosis a number of difficulties. In the beginning it occurred to me that the case was a light form of typhoid, towards which the gastric symptoms, the pancreas enlargement and the fever, though irregular, pointed. But, as after the cessation of the fever, the patient did not begin to recuperate, this seemed more and more improbable, since the pancreas enlargement also remained. The fever also recurring at a later stage could not be referred to a relapsing typhoid.

So the presumption that the case was one of miliary tuberculosis became stronger; the more so, as likewise the suspicion that we were dealing with a tubercular inflammation in the left trochanteric region, did not seem unfounded; yet, for the diagnosis of acute miliary tuberculosis, every positive symptom was wanting. The whole course of the disease showed

(2) Bezuglich des mikroskopishen Befundes dieses Falles sei verweisen auf Wesener; Ueber das vorkommen der Tuberkelbacillen in den Organen Tuberkulöser. Deutches Archiv. fur Klin. Med. Band 34. Heft 5, w. 6. S. 707. Fall 25.

that it was not an ordinary case of acute miliary tuberculosis. Then came the irregular appearance in the urine, of albumen, together with a considerable quantity of epithelial and lymph cells in the sediment. This led to the examination of the sediment for the bacilli of tuberculosis, through which we obtained a positive result. Hence it was established that we had a tuberculous disease of the kidneys, and this fact, together with the entire course of the disease, allowed us to suppose that we probably had a general tuberculosis. It was presumed that the starting point of the acute tuberculosis was in the diseased left trochanteric region, and that the disease spread thence to the kidneys and other organs. The post-mortem has proven this supposition to have been correct. Moreover, the causation of all the clinical symptoms, the fever, the pancreas enlargement, diarrhœa, emaciation, *et cetera*, became plain, and thus were established at once both diagnosis and prognosis at a time when no direct sign of acute miliary tuberculosis was prominent, and when the ophthalmoscopic examination also was of a negative result. First, later on, did the typical signs of the disease appear, and then was it possible to determine the presence of tubercular nodules on the left choroid.

This case, of such importance to diagnosis, was rendered possible to diagnosticate through the fact that the kidneys were strongly affected and had partly undergone caseous degeneration. In other cases, even where the miliary tubercles are generally disturbed, often only a few nodules can be found in the kidneys, which *intra vitam* produce no symptoms.

These miliary tubercles which, according to the investigations of Arnold[3] establish themselves by preference in the remote parenchyma of the straight and convoluted tubes, lead first, at a later stage, to caseous degeneration and to the excre-

(3) Arnold. Ueber Nierentuberkulose. Virch. Arch. Bd. 83. Heft. 2.

tion of tuberculous material through the urinary passages. It will only be possible in exceptional cases to make the examination for bacilli in the urinary sediment a useful diagnostic aid, as in like manner the examination of the sputa in this disease, according to Demme[4] d'Espine[5] and others, is generally of little avail.

Note.—The temperature quoted above is the axillary temperature according to Celsius. To get the Fahr. temp. multiply the degrees by $\frac{9}{5}$ and add 32.

From the Berliner Klin. Wochenschrift, No. 37, 1884. Translated by E. A. Boas, M.D.

Berlin, Oct. 11th, 1884.

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(4) Demme. Berliner Klin. Wochenschift, 1883, No. 15.

(5) d'Espine Revue Med. d. 1. Suisse Komande, 1882, No. 12. (Mit. von Ziehl. Deutche Med. Wochenschrift, 1883, No. 5).

SELECTIONS.

EXTERNAL USE OF CHLOROFORM IN LABOR. *By* A. SVANBERG, M.D., *Sweden.*

(Translated by C. W. Johnson, Chicago.)

Having found it advantageous, during the past few years, in severe cases of labor, where rigidity of the whole organ, or only the internal os, has caused an obstacle to delivery, or prevented some necessary operation or another, to use chloroform externally on the abdomen, and as I have never seen it mentioned in the literature within my reach, I consider I ought to make this method of using chloroform known to the profession. Physicians, to whom I have mentioned this method, have not known of its ever having been so used. For the country practitioner, who so often must perform his obstetrical operations without any assistant other than a midwife of limited knowledge, especially in administering chloroform, it must be a great benefit to be able to avoid using chloroform by inhalation to complete anæsthesia.

During the last few years of my practice I have succeeded in turning, several hours after the rupture of the bag of water, and also in removing retained placenta, without being forced to use chloroform by inhalation, but am convinced that in severe cases it may be necessary to use both methods. I have used it by mixing with sweet oil, equal parts, or chloroform two parts to oil one part, with which I have soaked a piece of

flannel, applying it between the symphysis and navel; then, by light strokes over the cloth, make sure it was close to the skin. In severe cases (after five minutes), I soak the cloth the second time, or pour it directly on to the cloth from bottle, where it lies, and by a few gentle strokes the oil is evenly distributed and none is allowed to run down on the vulva. One can thus use the chloroform without oil, but the odor interferes more with the operator, and it takes much more chloroform.

After from five to ten minutes I have always found the rigid and contracted uterus so much lessened that manipulations necessary to be done could be proceeded with.

The first time I used this method was in the spring of 1877. I saw the case with my friend Dr. O. Bloomgren. The placenta was retained for several hours, and patient was very weak from loss of blood. She was put under chloroform for half an hour without being able to remove placenta, on account of rigid contractions. Her condition was now very critical, and we feared to continue chloroform, but resolved to try it externally over the uterus, until her condition was such that it could again be given by inhalation. A flannel soaked in chloroform and oil was applied over the abdomen, and in a short time the placenta came away of itself.

In December, same year, I, with three other doctors, was called to a labor, a primapara, rachitic, and with small pelvis transverse presentation, with arm protruding. The uterus was firmly contracted around the fœtus, and it was impossible to pass the hand into uterus, in view of turning. She was completely anæsthetized, and continued for more than an hour without result. A warm bath was given, then again chloroform, but all in vain. At last I proposed to try chloroform externally, and in about fifteen minutes we proceeded with the turning.

Since that day I have never used chloroform by inhalation for rigid contractions of the uterus.

November 22, 1879, I was called by a doctor to deliver a woman, where he had failed after a trial of from six to seven hours. The pelvis was small, with a breech presentation, and internal os was rigid. Before we proceed to administer chloroform, I wished to try it externally, and this with the result that in twenty minutes after its application could bring down both feet, after which the labor went on without any unusual trouble.

In the winter of 1880, I was called about four miles away, where a woman, four hours before, had been delivered of child, but the midwife could not deliver the placenta. The patient was very weak from loss of blood. The placenta laid entirely within the uterus, the fundus reaching nearly to the navel, and internal os was so rigidly contracted that I could not follow the cord to its origin. After ten minutes application of the chloroform externally, the rigidity disappeared and my hand introduced; placenta was delivered along with a large amount of blood clots. The hemorrhage ceased immediately after the removal of the placenta, and the uterus contracted normally. Made rapid recovery.

On the 15th of July, this year, I was called into the country to see a multipara; the bag of water had ruptured more than seven hours before my arrival, the presentation was transverse, the uterus tightly grasping the fœtus. After applying the chloroform externally, she was delivered of a live child in less than one-half hour. The placenta was spontaneously delivered in ten minutes after the completion of labor. No loss of blood.—*From Eira-Tidskrift for Helso-och Sjukvard.*

SOCIETY PROCEEDINGS.

CHICAGO GYNECOLOGICAL SOCIETY.

October 31, 1884. Regular Meeting.—In conformity with an ancient custom, the members of the Society met at the residence (271 Michigan avenue) of the retiring President, Dr. A. Reeves Jackson, and were entertained by an elegant and elaborate banquet. After the banquet, the President called the meeting to order. The following officers for the ensuing year were elected:

President, Dr. H. P. Merriman; 1st Vice-President, Dr. E. C. Dudley; 2nd Vice-President, Dr. Charles Warrington Earle; Secretary and Treasurer, Dr. Edward Warren Sawyer; Editor, Dr. W. W. Jaggard.

After an appropriate address by the retiring President, the Society adjourned to meet Friday, Nov. 21, at the residence of Dr. C. W. Earle, 535 Washington boulevard, Dr. Edward Warren Sawyer to open the discussion of "The Premature Expulsion of the Ovum."

Address of the Retiring President—A. REEVES JACKSON, M.D.—In the course of his annual address, the retiring President, Dr. A. Reeves Jackson, in alluding to various influences which had retarded the progress and lessened the usefulness of the society, said: "This tendency to decay is especially manifest to those of us who remember the enthusiasm which characterized its earlier meetings. Then, the essayist was always

present to fill his appointment. The other members, equally diligent, came promptly, each filled to the brim with the subject for the evening's study, and ready to bubble over, like a boiling tea-kettle; and knowledge fairly oozed out of them, as Mark Twain once said of himself, "like the attar of roses out of the—otter." Those were halcyon days! The meetings were looked forward to with as much pleasurable anticipation as is felt by the boy who gazes upon the marvelous posters of a coming circus. This zeal so pervasive, and so promising of good results, came, by and by, to lessen; the early, lover-like ardor, began clearly to show signs of cooling. The transactions of the society possessed less and less of interest; the attendance was less regular, and less constant. The brightness of our sun has dimmed; there remains only the afterglow. There came a time when we all realized that the health of the society was failing. The pathology was complicated; but these conditions at least were present—anemia, atrophy, nervous exhaustion. Occasionally, a little fresh, healthy blood was infused, and under the stimulus the patient's drooping energies and failing strength were temporarily revived; but, mingling as it did with so large a proportion of the old, its influence was rarely felt beyond a single night, and the entire mass became as stagnant as before.

What shall the treatment be? While I desire council, I venture to suggest, for your consideration, a few remedies, calculated, as I believe, to meet some of the indications.

1. *For the Anemia.*—We need a largely increased membership. In order to attain this three things seem necessary:

1. To make the Society attractive.
2. To make its attractions known.
3. To make admission easy.

In regard to the first of these I have to say that the attract-

iveness of a scientific society can only depend upon the personal interest felt in, and given to the proceedings by those who take part in them. Therefore, every member should add his thoughts and his voice; and he should, by preparation, if necessary, add them intelligently.

But, next to having an attractive stock of goods, the wise merchant informs the public of the fact, and invites inspection. Let us imitate him.

Prior to each meeting let every one of us invite some one or more of our professional friends to be present, assuring them of a cordial welcome. We are thought to be a very exclusive society. Let us remove that impression. Not only should we invite reputable members of our profession to visit us, but we should invite them to join us. Very many persons who would never *seek* admission to a society would gladly enter if they had assurance that their membership was desired.

There is an inspiration in mere numbers—and we need it.

To make admission easy, abolish the requirement of an inaugural paper. This is a stumbling block to many; and to all, the trial is a severe one. The knowledge that the essay is to be a *test;* that it is to be *criticized*,—perhaps adversely,—is very likely, nay, in most cases, very certain to deter even those who would become valuable members from making application for membership. I am aware that we want workers; but we also want listeners. We want producers, but we also want consumers. If a man will not or cannot write a paper, he can listen to one. If he cannot instruct, he may be instructed. If he cannot do us good, we may still benefit him. And if we added a score of non-workers to our membership, the number of workers would not be thereby diminished. But it cannot be doubted that from an increase of membership obtained, in the way I have suggested, a certain proportion would become active and efficient.

2. *For the Atrophy.* This will be benefited by the increased membership. The body grows in proportion as it is supplied with blood. So does each of its parts; and as the characteristics of a community are the results of those of its individual constituents, each of these latter must be looked to. Each individual—each part—must grow, and then we secure growth of the whole.

3. *For the Neurasthenia.*—This condition is functional only, dependent doubtless upon the two which I have named. In this case, as in many others I have seen, it is not the result of over-work; not so much exhaustion as lack of energy; not so much debility as indisposition.

The rest treatment has been tried and has failed. Let us try the effect of exercise.

It only remains for me to thank the members of the Society for the undeserved honor conferred upon me one year ago, and I have finished.

In retiring from the presidency, I desire to express the hope that when, a year hence, my successor shall address us, and concerning the then future of our Society shall ask the question:

> "Watchman! tell us of the night,
> What its signs of promise are."

A respondent, pointing to our lengthened roll, our increased and improved work, may be able to say:

> "Traveler! From yon mountain height,
> See that glory-beaming star!"

Friday, Nov. 21, 1884, Regular Meeting.—The President, H. P. Merriman, in the chair.

Dr. Edward Warren Sawyer opened the discussion on the "Treatment of Abortion" Dr. Sawyer called attention to the

frequency of the interruption of pregnancy before fœtal viability. Madame La Chapelle says abortions are as frequent as labors at full term. The experience of the profession opposes this generalization. In his own practice, extending through a period of ten years, he had only seen from forty to forty-five abortions. As illustrative of the wonderful conservatism and care of nature in these cases, he had never met with a fatal case in his own practice, and had seen but one fatal case in the practice of his medical brothers. This fatal case was complicated by cellultis and pneumonia.

As to causation, abortions are divisible into two classes: (1) those occasioned by natural processes; (2) those induced by accidental or intentional violence. The former class usually terminates favorably, the latter class is the *bête noir* of the physician. It is a matter of medico-legal interest, that in abortions resulting from natural processes, *i. e.*, fatty degeneration of the decidua, the ovum and decidua are expelled as a rule, in an intact condition, while in criminal abortion, the product of conception is expelled in a more or less mutilated state. When the ovum has been mutilated, the embryo is extruded from the cavity of the uterus before the fœtal envelopes and decidua, and is frequently lost. Moreover, the embryo, so late as the fourth week, may be completely absorbed. The absence of the fœtus cannot be regarded in the differential diagnosis of abortion, molar pregnancy, and intra-uterine fibroids. Two distinct courses, as to the treatment of abortion have been adopted by the profession. The radical method of immediate evacuation of the contents of the uterine cavity, and the plan of patient waiting have been, in turn, defended and opposed. Dr. Sawyer has followed the expectant mode of treatment. He waits and allows nature to effect the expulsion of the product of conception. He has waited as long as one week. He has

been encouraged in this line of treatment by the fact that he has never seen any untoward consequences in the cases managed in this manner. He enjoins absolute rest in the horizontal position, and the exhibition of quinine and alcohol, as required. Local treatment, apart from the vaginal tampon, is limited to vaginal injections of chlorinated soda. He has never noticed hemorrhage or inflammatory action as the result of this course of action. He objects to the removal of the whole or part of the product of conception from the uterine cavity, because, (1) it is a painful procedure, involving the use of ether, which predisposes to hemorrhage from uterine inertia; (2) an assistant is necessary; (3) the amount of unavoidable injury to the genital tract is considerable.

In conclusion, Dr. Sawyer exhibited an unusual specimen. The specimen consisted of an intact, amniotic sac, enclosing a five months' fœtus, with velamentous insertion of the umbilical cord. Separation had occurred between amnion and choroion. The chorion, placenta, and decidua, remained within the cavity of the uterus. He had been called to see the woman, five months advanced in pregnancy, who was suffering from severe uterine contractions and hemorrhage. After a brief interval, the specimen, presented to the society, was expelled. Noting the intact condition of the amnion, Dr. Sawyer paid no further attention to the mass, told the woman to fear no more trouble, and went home. Next morning, upon visiting his patient, he was informed, that one hour after his departure, under renewed hemorrhage and uterine contractions, another mass was expelled. This second mass proved to be the chorion, placenta, and decidua. A medical friend, Dr. Albert G. Paine, had observed a strictly similar case.

Discussion.—Dr. W. W. Jaggard said separation between the amnion and chorion was relatively infrequent during the sixth

and seventh months, but was not uncommon prior to that period. In regard to the treatment of inevitable abortion, when the ovum was expelled in an intact or mutilated condition and decidua or portions of the fœtal membranes remained within the uterine cavity, it was necessary to regard the natural history of the condition. This condition had been appropriately termed by Breslau "incomplete abortion." The terminations are briefly:

(*a*) Spontaneous elimination of that portion of the product of conception remaining within the uterine cavity, as the result of retrograde metamorphosis, accompanied by intermittent hemorrhages and uterine contractions.

(*b*) Sometimes,—though seldom,—hemorrhage ceases entirely and the patient is apparently well. This interval varies from a few days or weeks to months. Suddenly hemorrhage and pains recur and the intra-uterine mass is expelled. This retention, with a long interval of rest, is noticed when the placental or decidual attachments are intact. That this act constitutes the termination of the labor, so to speak, is apparent from the fact that the milk secretion is usually established at this time, and the reductive metamorphosis of the uterus is instituted.

(*c*) More frequently, the retained decidua, or placenta, undergoes suppurative or ichorous changes, as the result of which systemic infection is liable to occur, despite the thrombosis of the uterine sinuses, and the proliferative change, in the uterine mucosa.

(*d*) The retained placenta or decidua becomes converted into placental or fibrinous polyps—conditions, which always require operative interference.

All four terminations present sources of danger to the mother. From this glance at the natural history of the condition,—for the elucidation of which Spiegelberg deserves espe-

cial recognition,—the weight of evidence is in favor of the so-called radical treatment. Empty the cavity of the uterus at the earliest possible period. The plan recommended by Dr. Mundé, in the February number of the *American Journal of Obstetrics*, 1883, was worthy of high commendation. One finger within the uterus, one hand on the fundus was preferable to instruments, when equally effective. The subsequent treatment was one of extreme importance.

Whenever the cavity of the uterus is invaded by the finger, or any instrument, it must be irrigated by some antiseptic solution. Two per cent. solutions of carbolic acid, or one to two thousand of the bichloride of mercury, are efficient in the prevention of conditions, favoring decomposition and sepsis. After irrigation of the cavity of the uterus, it was a good plan to introduce within the uterus a *bacillus* of powdered iodoform, weighing at least six grammes. Symptoms of iodoform intoxication rarely, if ever, followed the exhibition of this quantity. Ten grammes are usually required to produce toxæmia.

Dr. Philip Adolphus said that abortions were more frequent among multipara than primipara. In the way of prophylactic treatment, he thought women ought to sleep by themselves, during the time corresponding to their menstrual periods. Among the upper classes in Europe, it is customary for man and wife to sleep in separate beds. He thought it an excellent plan. When abortion was inevitable, the treatment must be symptomatic. To arrest hemorrhage, plug the cervix, not the vagina. Use tupelo, or laminaria tents, not those composed of sponge, for obvious reasons.

Use thin tents. When fetor is noticed, empty the uterine cavity. For this purpose, either finger or curette might be employed.

Dr. D. T. Nelson said the dangers from abortion were (1) hemorrhage; (2) sepsis; (3) inflammation. Rest and opium were not sufficient. He could not rest until the uterine cavity was empty. He had no sympathy with the expectant plan of treatment. The manner of emptying the uterine cavity was important. If the cervix was dilated, or dilatable, the cavity should at once be cleaned out with the finger. If the cervix was not dilated, nor dilatable, the cervix ought to be plugged in the manner indicated by Dr. Adolphus, with tupelo, or laminaria tents. If the cervix was partially dilated, or dilatable, and the uterus fixed, give an anæsthetic, relax the spasm, and proceed as in the first case. He had no fear of ether predisposing to uterine inertia. In dissecting off the placenta, it was advisable to glove the finger tips with the amnion. In the early months, when the ovum was attached near the cornua, it was necessary to bear in mind the possibility of irregular contraction, and the inclusion within either cornu of a bit of the placenta. The cornua must be thoroughly explored. When he employed intra-uterine irrigation,—by no means an invariable method of treatment,—he used a one-half per cent. sol. of carbolic acid, or a dilute. solution of ordinary table salt. The solution must be hot, 110°–120 F. Hot water, in the absence of carbolic acid, or salt, was effective as a cleansing agent, and as inducing uterine contractions. Dr. Nelson had had no experience whatsoever with iodoform, but regarded it as superfluous in all cases.

Dr. Wm. E. Clarke was more afraid of hemorrhage and sepsis, than of inflicting injury to the genital tract. He always emptied the uterine cavity at the earliest possible period.

Dr. T. D. Fitch did not consider Dr. Sawyer's specimen a rare pathological occurrence. He had seen the same separate,—at the same time,—frequently. He agreed with Dr. Nel-

son in treatment. Still, when the cervix was not dilated, he was disposed to prefer the expectant line of treatment. At the time of the occurrence of abortion, the uterus was in a physiological condition; operative interference at a later period was attended by increased risk, as the utérus was then in a pathological state. Usually, he found the placenta and membranes detached within the lower segment of the uterus. As he had a large hand, with short fingers, he employed the placental forceps of Hodge, Dewees, Elliott or Roler. Once, in the country, he used an ordinary pail bail, with the rough edges filed off. He was not in favor of intra-uterine injections. The vaginal douche was sufficient.

Dr. Wm. H. Byford said that abortions were more frequent in large cities than in the country. Madame La Chapelle's estimate of the frequency of abortion was not exaggerrated, when applied to large communities. In the country, he thought that one abortion to three labors at term represented a fair average. Abortion was never a physiological process, although abortions from disease of the ovum were attended with less danger than those resulting from morbid, uterine changes. In disease of the ovum, the circulation was impaired, the embryo perished, and expulsion follows, with the minimal degree of hemorrhage, pain and sepsis. When the cause of abortion was external violence, or decidual endometritis, dangēr, in each of these three directions, was increased. The specimen exhibited by Dr. Sawyer, was of rare occurrence at so late a period; it was comparatively common during the early months.

As regards the prophylactic treatment, he had observed two clinical facts, in connection with the habit of abortion. When uterine contractions were the prominent symptom, abortion could be arrested in many cases by absolute rest and

opium; when hemorrhage was severe, all attempts at arresting the process were usually futile. This was especially true during the first three months. At a later period, even when hemorrhage was severe, abortion might be arrested.

In regard to the treatment of inevitable abortion, he had never seen the time, when champions of the expectant and radical courses of action did not exist. The treatment must be governed by the consideration of the individual case. In any case, the patient must be carefully watched. He had never seen a case of abortion terminating by immediately fatal hemorrhage. The acute anæmia, however, might induce a condition which would render the woman more susceptible to sepsis or any intercurrent disease. He feared sepsis and metro-peritonitis more than hemorrhage. He was conservative as to the operative interference. Let nature do what she can; only in case of failure on her part, interfere. The finger was preferable to any instrument. Then it was not necessary to insist upon the removal of placenta or membranes with mathematical accuracy. If the placenta was grasped by an irregularly contracted uterus, cut off the free portion, allow the rest to remain in the uterine cavity. If two-thirds of the placenta were removed and the uterus well contracted, the case was to be considered in a safe condition. In event of sepsis, remove all the intrauterine mass.

Dr. John Bartlett stated that, in his practice abortions were as frequent as labors at term. The product of conception was usually expelled in its integrity. When abortion was inevitable two conditions were required, before operation interference was justifiable.

(1.) Dilatation of the canal of the cervix to the extent necessary for the passage of two fingers. (2.) The separation between decidua and the uterine mucosa must be more or less

complete. Until these conditions were present, the vagina ought to be tamponed. For a tampon, he was in the habit of employing bits of cotton tied on a string, in the manner of the kite-tail.

He had seen cases in which the placenta had remained for a long period of term within the uterine cavity without causing symptoms. The retention in one case lasted through a period of three months; in the other case, the period was four months. As to the length of time, the tampon could be left *in situ*, he had adopted Dr. De Laskie Miller's rule of allowing it to remain twenty-four hours. He had frequently tamponed through three days. The colpeurynter of Braun was a useful tampon. No tampon was effective when the hemorrhage was not of a passive character, and uterine contractions were severe.

It was necessary to diagnosticate between placenta prævia and abortion. Placenta prævia implied simply an *error loci* of the ovum. It was included between the ring of Bandl and the external os. Dr. Bartlett had never seen a case of abortion terminate fatally from hemorrhage.

Dr. A. H. Foster had seen one case of retained placenta, in which the retained mass gave origin to no serious symptoms for a period of four months. The importance of subsequent treatment of the puerperium was urged.

Dr. E. C. Dudley referred to the dangers of cervical laceration, and subinvolution in consequence of abortion. The best method of applying the tampon was by means of Sim's speculum.

Dr. C, W. Earle occupied the middle ground between the expectant and the radical methods of treatment. He did not agree with Dr. Mundé.

Dr. H. P. Merriman, after endorsing Dr. Byford's remarks

on the ætiology of the condition, said that he did not like to use ergot in these cases, as it caused irregular contraction of the internal os, imprisoning the placenta without favoring its expulsion. He produced uterine contractions by dilating the os, and then followed the expectant plan of treatment.

Dr. E. W. Sawyer, in closing the discussion, said that he had observed abortion in the lower animals, and concluded nature required little interference. He then briefly sketched the line of expectant treatment, which he was in the habit of recommending.

Dr. John Bartlett then exhibited some casts of the pregnant and non-pregnant uterus for the purpose of class illustration. The idea is an extremely ingenious one, and will receive attention at an early period.

The Society adjourned, to meet Dec. 19th, at the residence of the President, Dr. H. P. Merriman, No. 1350 Michigan avenue. Subject for discussion, "Extra-Uterine Pregnancy," to be introduced by Dr. Wm. H. Byford by a paper on "A Case of Interstitial Pregnancy."

W. W. JAGGARD, M. D., *Editor*,
November 22nd, 1884. 2330 Indiana ave.

CHICAGO SOCIETY OF OPHTHALMOLOGY.

June 9, 1884.—The Society convened as usual, in the parlors of the Illinois Charitable Eye and Ear Infirmary. The following gentlemen were proposed for membership: Dr. Ira Marshall, Dr. Casselberry, Dr. W. H. Fitch.

Dr. Holmes made a verbal report of an interesting case, in which, two months after a very successful extraction of cataract, he divided extremely delicate capsular remains with a Knapp's needle-knife. The patient was greatly elated at the great improvement of her sight.

After a few days, the patient complained of irritation, although she had been confined to her room constantly, and to her bed four days. The eye had been under the influence of atropine and boracic acid. The conjunctiva, especially of the lids, was red. A small mass of mucus (?) was found on the edge of the lower lid and adherent to the globe. On the removal of this collection, it was observed that a minute filament extended from the needle puncture down over the cornea. There had been no pain. On the eighth day, vision had not suffered. More or less pain soon followed, with slight increase of tension. Eserin was substituted for the atropia. It was observed that a very fine, thread-like opacity extended into the vitreous. In a few days, the vitreous became more and more cloudy, the conjunctiva red and œdematous, and the eye painful. In a week more the patient was unable to count fingers.

The reporter was inclined to believe that the inflammation was not caused primarily by the injury of the intraocular tissue, but secondarily by the entrance of germs through the puncture from the minute prolapse of vitreous.*

At the conclusion of these remarks, Dr. Holmes invited the members to repair to the patient's room and examine the case at their leisure. The case was discussed at length. Owing to the great interest attached to it, Dr. Holmes was requested by a vote of the Society to prepare a paper on his experience in secondary operations for cataract.

Dr. G. Y. Gardiner read an exhaustive paper on "Boracic Acid in Ocular Therapeutics." The paper will soon appear at length.

BOERNE BETTMAN, *Secretary.*

* We have since learned that the patient has greatly improved in all respects. Her sight, especially, is now quite good.

August 12, 1884.—Drs. Marshall, Casselberry and W. H. Fitch were elected to membership.

Dr. Hotz presented a pathological specimen with the following history: Mary S. (æt. 4) was first examined August 1, 1884. About ten days previously, without injury or any other manifest cause, the left eyeball became violently inflamed. She slept well, and never complained of pain. One or two days before her visit to the Dr.'s office, the patient was apparently sick; she had no appetite and no desire to play as usual. Before this inflammation set in, the left eye had the same appearance as the right. The following changes were noted by Dr. Hotz, August 1: Intense episcleral injection, interstitial haziness of cornea, retraction of iris, in consequence of which anterior chamber was abnormally deep. Pupil invisible, three-quarters of the anterior chamber being filled with a grayish-white substance. Tn. (?) fermentations were ordered. August 11, upper anterior portion of sclerotic discolored and distended (staphylomatous), injection of eyeball more intense, condition of cornea the same; anterior chamber filled entirely with the grayish-white substance.

The eyeball was enucleated and at once opened by a meridional section. Vitreous appeared wine colored and cloudy in its anterior half, the cloudiness being most dense near the origin of the ciliary processes and anterior limitans, which appeared densely white. Lens intact; pupil contracted; anterior chamber filled with a whitish-red vascular substance two mm. thick. It cannot be separated and distinguished from the iris tissue, and is firmly coherent with the posterior surface of the cornea. At the cornea, scleral margin, the anatomical boundaries of the various tissues are lost, all blend with the mass which has invaded cornea, sclera, and ciliary body. There is no trace of ciliary processes. The surface from ova serrata

to pupil is perfectly flat and smooth. The posterior part of the eye has a normal appearance. The doctor expressed the opinion that the growth might prove to be a so-called granuloma on microscopic examination.

Dr. Boerne Bettman read a paper on "Amaurosis Following Hemorrhage." The two cases cited offered certain symptoms which, according to the doctor's opinion, pointed to a common cause, namely, to intra-cranial hemorrhage, with subsequent alterations of the optic nerve.

The first case, Margareth Feth, æt. 26, was admitted into the Eye Clinic of Heidelberg, 1879. She is of healthy parentage. Patient had repeated attacks of convulsions up to her fifth year; several brothers and sisters, seven in all, died a few months after birth from the effects of convulsions. Miss F. was a healthy, well-nourished child. Menstruation set in at the age of sixteen. On the 17th day of May, while at home, she suddenly experienced severe pain on the left side of her head, accompanied by dizziness and severe spells of vomiting. The pain increased during the night; a physician was hastily summoned; he prescribed powders, which apparently intensified the nausea and emesis. On the 21st, a second attack of sudden dizziness overcame her while in bed. She fell into an unconscious state, in which she remained twenty-four hours. While in this condition a large quantity of dark colored blood was seen by her mother to well from her mouth. On coming to, everything appeared dark about her. Investigation showed her to be perfectly blind. Sight returned to the right eye during the course of the day. A third attack of consciousness followed a few days later, leaving the sight of ther ight eye very much impaired. On the day of admission into the clinic there was complete amaurosis. Both pupils were dilated ad maximum. Irides did not respond to light. The ophthal-

moscope revealed pronounced atrophy of both discs. Treatment of all varieties proved of no avail.

The second case was that of a boy, George Dohl, age three. The child fell against a chair, striking the upper teeth. The gums bled for three days, followed by severe convulsions, which lasted fully forty-eight hours. After the first twenty-four hours, during an interval of consciousness, the parents noticed that the child had lost sight in both eyes. Three days after the injury the child presented the following appearance: Pale, weak looking boy. Pupils dilated *ad maximum*, reaction to light prompt. Media both eyes clear. Papillæ very anæmic, almost perfectly white, caliber of arteries somewhat dilated. Amaurosis. The prognosis was unfavorable. Particular pains was taken to call the attention of the parents to one favorable feature of the case—the prompt reaction of the irides, which was interpreted as a sign of a partial restoration of vision. Sight gradually returned sufficiently to enable the child to roam about the house. Eight weeks after the accident, a second fit of convulsions ended fatally. The various theories of Graufe, Lammelsohn and Leber were then discussed.

Dr. Jefferson Bettman then read a paper entitled "Fracture of Base of Skull with Complication of Vago-Accessory nerves."

Mr. W., aged 45, consulted Dr. B. for hoarseness and deafness. Three weeks prior he had fallen off a wagon and sustained severe injuries on left side of head and face. This injury was followed by a sanguineous discharge from left ear, complete deafness on same ear, aphonia and aphagia. Intense headache, vertigo, vomiting and other cerebral symptoms were also present. A week later he was able to leave his room with but slight changes in the above mentioned main symptoms. At time of examination, gait was staggering, head was

slightly drawn forwards and to the right side. Left *membrana tympani* showed traces of a recent rupture. Hearing power and bone conduction entirely gone on same ear. The posterior superior wall of external auditory meatus reddened and acutely sensitive to touch of probe. A constant *tinnitus aurium* caused the patient great annoyance. Further examination showed motor paralysis of left fauces and pharynx and almost complete anæsthesia of these parts. The left vocal cord occupied cadavernic position with no overlapping of the arytænoids. Palpation with a laryngeal probe, revealed a state of anæsthesia of the entire left larynx. Auscultation over the œsophagus yielded a distinct rumbling sound on attempted deglutition (*deglutitio sonora*). The left side of neck and head was painful on deep pressure. The patient was lost sight of and only after an interval of nine months did he again afford the observer an opportunity to examine the state of affairs. Sensibility was now restored to larynx and pharynx, but the left vocal cord was still in a paralytic state. The condition of of the left ear was in no way altered, the *tinnitus* being distressing. He still complained of dizziness aggravated on lowering his head and a constant dull headache. Large doses of iodide and faradization had no material effect in reducing these disturbances. The essayist then dwelt at great length upon the anatomy and physiology of the nerves affected, their relation to each other and their respective functions, innervation of the larynx, pharynx, etc. The present paper was merely a preliminary communication, further discussion and elaboration being reserved for future publication.

Dr. Holmes made a verbal report of an unusual case of upward strabismus. A boy 13 years of age had suffered from very early childhood from a peculiar turn of the right eye upward, which occurred about every half minute. There was

not a quick spasmodic motion as in chorea but a slow movement as in certain cases of convergent strabismus. During the contraction of the *levator superioris* more than three quarters of the cornea was concealed under the upper lid the vision with—$\frac{1}{48}$ cyl. 90° was normal. Neither by the use of prisms or any other means could diplopia be induced. A division of the superior rectus almost absolutely relieved the annoying action of the muscle. At the end of 3 months the patient reported no return of the anomaly.

BOERNE BETTMAN, *Secretary.*

CHICAGO PATHOLOGICAL SOCIETY. *April 14, 1884. Regular Meeting.*

The Society was called to order by the President, Dr. Angear.

Dr. Campbell was elected Secretary, *pro tem.*

After opening the meeting the President was summoned away, and called Dr. Lyman to the chair.

Dr. P. C. Jensen, 128 Milwaukee avenue, Chicago, was unanimously elected to membership.

Dr. A. E. Hoadly was proposed for membership by Drs. Skeer and Lyman. It was then moved and seconded that as regarding election of delegates to the American Medical Association, any member wishing to act as such should call on the Secretary for suitable credentials. Carried.

Dr. J. D. Skeer then reported an interesting case of impacted fracture of the femur, with the following history: Mrs. C., aged eighty years, of fair constitution, but, on account of advanced age, of relaxed muscular fiber and exhausted nervous system. In passing from one room to another she tripped on a rug and fell to the floor. The force of the fall must have

been expended near the *trochanter major*. Found her lying on the floor on the back, the right foot everted and the limb shortened; she was almost overcome by the shock, and in great pain at hip joint. The femur would rotate all the way up to the socket. There was no crepitus, and the Doctor had no hesitation in pronouncing it a case of impacted fracture of the femur. Notwithstanding considerable deformity, best seen by examining the specimen, he made no attempt to reduce the fracture, and no effort should be made to reduce an impacted fracture of the neck of the femur; on the contrary, the indications are to preserve the impaction; but extension by weight and pulley, to overcome muscular contraction, may be necessary to prevent displacement. In this case he made no extension, applied no splints, placed the limb on an inclined plane, made of pillows, and directed hot water dressings; giving anodynes to relieve pain and encourage reaction. Tonics and stimulants were given as needed and required, and good nursing maintained. The patient lingered in a low condition for fourteen weeks, when she died from exhaustion.

This case is interesting on account of the age of the patient, the apparently trivial cause of the accident, the length of time she lived in her exhausted condition, the extent of the fracture and the amount of repair.

One notices in the specimen a fracture on the posterior aspect of the bone, extending from the base of the *trochanter major* to the *trochanter minor*; both trochanters, including the intervening fragments of bone, being rotated outward to an angle that would be equal to about the fifth of a circle. Another fracture in front, along the spiral line, at the base of the neck; the back part of the neck being crushed into the fissure between the fragment and the body of the bone—the neck being at a right angle to the axis of the femur. We find the

bones pretty firmly united in their abnormal position by osseous union. It may not be necessary to observe that this fracture is outside of the capsule.

Case II. Stricture of the Sigmoid Flexure of the Colon. Reported by Dr. Skeer.—Mr. B., aged 62 years, born in Scotland, has been a resident of this country for 33 years, a carpenter by trade. Never had much sickness. Brother died at the age of 59 of cancer of the stomach, as demonstrated by post-mortem examination. On the 28th day of February last he complained of constipation, and took a dose of castor oil, which did not operate. The next day called Dr. Griswold, who gave him mass. hydrarg, and followed it with compound licorice powder, which produced a free and satisfactory operation.

Dr. G. did not see him again until March 10. In the meantime patient had taken from a neighboring physician drop doses of croton-oil every three hours until six drops were taken. The oil excited violent retching and vomiting, without operating on the bowels.

Dr. Earle was called in consultation, and advised the administration of pepsine and bismuth to allay the vomiting, and large warm water injections to move the bowels, which were continued for five or six days, without any movement of the bowels.

Dr. Skeer saw him for the first time on March 15th. He was almost free from pain, abdomen enormously though uniformly distended, no pain on pressure, not much fever nor acceleration of the pulse, and some sickness of the stomach. Ether was then given, and the rectum explored; a hard mass was felt projecting down between the rectum and the bladder. On passing the hand into the rectum the sense of touch conveyed the impression as though the hand was being inserted

into the bladder. Prolapsus of the bowel was diagnosticated, and perhaps an organic stricture in the sigmoid flexure of the colon.

On the 10th of March, Drs. Hoadley and Graham were added to the council. Preparation was made to open the abdomen, if necessary, to restore the prolapsed bowel. Patient being etherized, Dr. Hoadley passed his hand to the sigmoid flexure of the colon, the prolapsed bowel disappearing before it, and he could find no stricture; it was thought best to defer further interference and await developments. The following day the patient had a free movement of the bowels, and passed off considerable gas. The distention of the abdomen, however, continued as before; liquid nourishment and supporting treatment were given, but no anodynes required. The patient grew gradually worse, without much change and without any further movement of the bowels; died on the first day of April, just one month from the commencement of the obstruction.

Post-mortem examination twenty-four hours after death. Only the contents of the abdominal cavity were examined; the peritoneum inflamed, covered with lymph.

Removed sigmoid flexure, and about its center was formed an organic stricture which almost closed its caliber. Above this the bowel was very much distended, and contained a large quantity of hardened fæces, forming a pouch which had been crowded down into the pelvis between the rectum and the bladder. Above and just at the seat of the stricture were two large perforating ulcers and an orange seed.

The immediate cause of death was peritoneal inflammation following perforation.

The Society then proceeded to discuss the case above reported.

Dr. Lyman remarked that it was usual in cases of obstruc-

tion low down, to find but little or no pain, but when located near the stomach, pain was great.

Dr. C. J. Lewis spoke of a recent case of chronic bronchitis where he was able to obtain a post-morten. He failed on examination of the lungs to find a single normal cell. The upper third of one lung was entirely absorbed, and a large cavity in the other; general pleuritic adhesions. At no time was the pulse above 100. Average 80 to 84. There was tubercle present in quantity.

Dr. Lyman saw the case a short time before death, and thought the general symptoms were either of cavities by ulceration or of enlarged bronchial tubes. The age was fifty-six.

Calling Dr. Skeer to the chair, Dr. Lyman then reported a post-mortem case.

The man, age forty-five, seaman, owned his bark, and was, in October, 1881, out on the lake during the memorable gale; had never been so well since. During winter of 1883 his character changed, he became despondent, worried and fretted about his ship; on starting on his voyage he soon acted strangely—hilarious, talkative, and quarrelsome—was taken ashore and home; Dr. Lyman summoned. His pulse was rapid, face suffused, and had not slept for a long time. He was full of money-making projects. Under treatment some improvement was made during the autumn, but in winter his despondency returned with suicidal impulses; timid upon going out alone. He realized that he had insane feelings, and was, by his own wish, sent to the asylum. Made his will. For several months afterward was quiet and contented, but dared not leave, and still had a tendency to despondency. Retired one night as usual, in good condition, and was found dead in the morning, without any sign of a struggle, violence or poison.

Post-mortem revealed, on exposing the brain, great dryness

of its surface. To the eye, its color, texture, and appearance were natural. The *medulla oblongata* and *pons varolii* were softened, hence supposed the disease to lie in the blood-vessels of the brain, of such character as to cause death of the pons and medulla, so that breathing could no longer be carried on. No opportunity was afforded for making a microscopic examination. Dr. Lyman thought the case was one of so-called "circular insanity," beginning with melancholy, then exhilaration, followed by an intermission of nearly a sane condition, then melancholia again.

These phases may occupy a few days, or as many weeks, in passing, but may change as seasons change.

Dr. Campbell then inquired if the condition was caused by the shock of fright during the severe storm, and Dr. Lyman replied that he thought so, and that the man had considerable predisposition to cerebral excitement.

Dr. Haven was reminded of a case seen in Wisconsin, of "circular insanity," where the changes varied with the seasons; all right, or nearly so, during the summer, but insane during the cold weather.

Dr. Lyman stated that the intervals may be long between the phases, then again the patient may go to bed and asleep in one phase, and awake in another. He then stated that in the case he had reported there was no trace in the family history, either of specific disease or injury of any kind.

Present, about fifteen members and several visitors.

The Society, on motion, adjourned.

J. H. TEBBETTS, *Secretary*.

May 12, 1884, Annual Meeting.—The Society was called to order by the President, Dr. Angear.

The minutes of the last meeting were read and approved.

It being the annual meeting, the first business of the evening was the election of officers for the ensuing year. According to former custom, an informal ballot was taken for President, Dr. Angear receiving three votes, Dr. E. L. Holmes three, Dr. J. D. Skeer two, and a number of scattering votes.

On formal ballot. Dr. J. J. M. Angear received a majority of the votes and was declared elected.

Dr. E. L. Holmes was elected Vice-President; Dr. J. H. Tebbetts, Secretary and Treasurer; Drs. J. D. Skeer and H. M. Lyman, Censors.

The Secretary then read his annual report, which was afterward approved and accepted.

On motion of Dr. Lyman, the Society passed the Secretary a vote of thanks for said report, and requested its publication in the CHICAGO MEDICAL JOURNAL AND EXAMINER.

The Treasurer's report was then read and accepted; after which, the President, Dr. Angear, in a few remarks thanked the Society for his reëlection, bespeaking his interest in the Society, both in the past and in the future. He hoped the general interest of the members might be increased in some way; perhaps by contriving a few social meetings, followed by a supper, etc.; also, that dues could well be increased; that this Society had a place here in Chicago and was formed to grow; that outside members of the profession had little idea of the quality or quantity of its work, and did not realize how much they were missing in not becoming active members at once. Thought, also, the Secretary's suggestion, of a year ago, a good one: that of getting our constitution and by-laws printed, together with a revised list of membership. In conclusion, considered our present location a good one, and that the Society should settle down therein, and feel more at home.

It was then moved by Dr. Holmes that the President be thanked for his speech. Carried.

Dr. A. E. Hoadley was then elected to membership unanimously.

Dr. E. A. Baldwin, 84 Park avenue, was proposed for membership by Drs. Holmes and Dobbin.

The Society then listened with close attention to a verbal essay, by Dr. Lyman, upon "Atmospheric Dust in Relation to Disease;" and although a full abstract would be very valuable and interesting, a few notes only were recorded.

All are of course familiar with the fact that the atmosphere may become unfit for respiration, and that minute particles may be of material, palpable character, and are generally liable to produce disorders of the respiratory tract; hence, this ground does not need to be passed over; and, though familiar, is really not as yet definite.

All are also familiar with the injurious effects caused in certain arts and trades by flying particles of irritating matter,—from grindstones, emery wheels, flying cotton dust, grain dust, etc., all of which cause serious pharyngeal trouble. Again, all are acquainted with certain forms of asthma, caused by the atmosphere being charged with pollen of plants, grasses, etc., at certain times in the summer. A friend goes to Northern Michigan, every summer, to obtain relief from asthma, hay fever, and is there very comfortable indeed, except when a strong southerly wind blows for several hours, laden with dust or pollen; then is uncomfortable while wind remains in that quarter.

It may not be generally known that there are, besides these varieties of dust, dust from other sources, continually diffused; and first may be mentioned cosmic dust, which enters our atmosphere from space, and some of which passes back again, but much of it is constantly falling. A German scientist es-

timates the amount falling upon the earth at one half million tons annually, which is really a large amount, and perfectly appreciable when sought for.

The Challenger expedition found, in deep-sea soundings in the Pacific, little masses of pumice from volcanic sources; also, little microscopic spherules, perfectly round like shot, and as uniform in size and shape; these were composed of meteoric iron. When a meteor falls, the friction is so great, that the outer surface of the iron mass becomes broken off by heat scintillations, and these, in form of spherules, gradually settle, widely diffused, all over the surface of the globe. The same scientist found, on the surface of snow and ice in Greenland, this same deposit.

In addition to meteoric dust, there is terrestrial dust.

In California and Oregon there is found, at times, dust from the high interior plains of China, from across the Pacific; fine alluvial soil, in motion by the wind. Dust from the Desert of Sahara rains down on the Madeira, Canary, and Cape Verde Islands. Dust of the Pampas (Darwin) settles on the east side of the South Atlantic; also, dust from the high, arid plains of Utah and Colorado, is thrown up by the wind and blown great distances. Volcanic dust is transported to the highest altitude of any terrestrial dust. Whymper, when ascending Mt. Chimborazo, South America, observed an eruption on Mt. Cotopaxi, early in the morning, sixty-five miles to the northeast. A column of black smoke arose twenty thousand feet above the cone, in less than two minutes; it there reached an air-current going towards the Pacific Ocean, then a northerly current to the south, then came towards them, a circuit of over one hundred miles. Very fine color effects were produced by the dust hiding and intercepting the sun's rays; green, then lurid purple, unlike anything ever seen, and frightful in

appearance; the dust blackened the snow and penetrated clothing and instrument cases.

The gorgeous sunrises and sunsets of last winter, were connected with and caused by volcanic dust.

The volcanic eruption in the Straits of Sunda, last October, was the greatest ever known, and its disturbance was felt all over the world, and probably had some effect upon the world's health.

Dr. Lyman then gave a fine and vivid description of the eruption. There is no known measurement of the amount of dust fallen; the sky completely darkened; vessels, many miles away, lighted binnacle and other lights at midday; a fearful rain of mud; the islands were covered feet deep with white volcanic dust, like snow; the sea surface dense with square miles of floating pumice, which finally becomes water-logged, its cellules filling, and then sinks.

Then arose the important question whether such an admixture of dust in the atmosphere may not be a cause of disease. It would be a difficult thing to prove, as there must be shown close connection between presence of the dust in quantity and any considerable outbreak of disease.

Dr. Lyman began to observe, about Jan. 1, a considerable number of cases of inflammation of the posterior nares and larynx, quite different from any ever seen before by him. The individual seemed in otherwise perfect health, no febrile movement; but suddenly there came on dryness of the pharynx and sensations analogous to local congestion; he observed this before his attention had been called to the dust by the scientific journals.

During ordinary weather there are no great changes between the lower and higher strata of the atmosphere; then, when the first cold wave ("cold snap") came, there was a down-pour

of the upper atmosphere upon the lowest levels. This produces disturbances, high winds, and other like phenomena, and Dr. Lyman thought these little crystalline bodies thus suddenly descending subside slowly and drift like smoke.

Tyndall ("Tyndall on Dust")observed that the atmosphere is always charged with dust, giving the sky its deep blue color by reflecting the blue rays of light and transmitting all the others. A close box is filled with smoke, with one aperature admitting a single ray of light. In this ray, dust is shown as blue; a heated bar held in this ray darkens the ray entirely, showing that the dust is cleared from that portion of the space. Tyndall at first thought the bar burned the dust, but afterward proved that radiant force repels all floating particles in the atmosphere. Still more powerful for this purpose is electricity; and after a severe thunder storm the air becomes, on the next day, wonderfully clear and pure, which is due to the electricity, and not to wind nor rain.

Dr. Lyman would now like to inquire of members if any noticed peculiar conditions of the respiratory organs during the past winter.

Dr. E. L. Holmes rose to inquire whether the action of sea-water would not destroy all cosmic or meteoric dust in a short time, and he was answered that the material was so nearly chemically pure it oxidized but slowly, and the supply was constantly being recruited.

Dr. Robison stated that he had treated a great many cases of hyperæmic catarrh the past winter at the dispensary, and that there had really been a remarkable increase of these cases, while attendance had not perceptibly increased, and this condition is still present and attracts some attention.

Dr. Norman Bridge noticed during last winter, in private practice, a considerable increase of throat cases.

Dr. Lyman then stated that this volcanic dust had not yet all settled, and that with the hand shading the eyes, one can still see a hazy band on each side of the sun, even on a clear day.

Dr. Bishop expressed his interest in the subject and thought many individuals especially susceptible to this dust. Pollen arises to about 150 feet, and there are many with personal idiosyncrasies. Farmers seem to be less liable to hay fever than clergymen, lawyers and physicians; some individuals will have attacks of all the forms of asthma, others of one only.

Dr. Angear thought it evident that there must be more than the mechanical effect upon the lung tissue by the dust or pollen. Ordinary dust that can be coughed up is not necessarily injurious; irritating particles not so readily coughed up are injurious.

One observer noticed that dust from America was floating in the air in Africa, and vice-versa.

Dust may have originated in some morbid matter or fluid, and convey that material and contaminate the body. Dust may have, perhaps, some chemical influence unseen microscopically. A test should be employed, using large quantities.

Dr. E. L. Holmes stated that in powdered ipecac the drug can be measured, but not the individual idiosyncrasy.

Dr. Twining inquired what proportion cosmic or volcanic dust bore to the ordinary dust in the air, and Dr. Lyman replied that the proportion was very variable; there was no constant ratio.

Dr. Bishop inquired of Dr. Lyman whether he had had more throat cases during the fall than in the last two months; and Dr. L. replied, not particularly, but in character were peculiar.

Present, about sixteen members.

The Society, on motion, adjourned.

Park Institute. J. H. TEBBETTS, *Secretary.*

Secretary's Annual Report for Year Ending April, 1884.—Meetings.—During the past year the Society has held twelve regular meetings, at several different places. The first meeting of the year, the annual meeting, was held at 533 W. Adams street, May 14, 1883, and the last, April 14, 1884, at the Park Institute. The meetings from June to November, inclusive, were held in the new building of the College of Physicians and Surgeons. This location not proving sufficiently central and convenient for a majority of the members, the Society next held its meetings, during December and January, in the parlor of the Washingtonian Home; but in February, being unable to obtain this room any longer, found comfortable quarters at 105 S. Ashland avenue, in the Park Institute, where meetings have since been regularly held, making three months' time at the present location.

Members.—One hundred and sixty members have attended during the year, an average of about thirteen at each meeting. Thirteen ladies and gentlemen were proposed for membership during the year, all of whom were unanimously elected, and have proved active and valuable members.

Postals.—There have been printed and mailed to members, fourteen hundred and thirty-seven postals, giving time and place of meeting and order of exercises.

Work of the Year.—The following literary and scientific work has been accomplished by the Society during the year: Thirteen papers, seven detailed reports of particularly interesting cases, three announced discussions, and were entitled as follows:

1. Paper. Dr. G. Frank Lydston, "The Treatment of Varicocele."

2. Paper. Dr. E. P. Murdock, "The Immediate Operation for Repair of Lacerated Cervix."

3. Paper. Dr. John A. Robison, "Myxoedema."

4. Case Reports. Dr. E. R. Bennett, *a*, "Lumbago," *b*, "Peculiar Case of Syphilis."

5. Paper. Dr. D. R. Brower, "Chorea."

6. Case Report. Dr. E. P. Murdock, "Infantile Tetanus."

7. Paper. Dr. William A. Walker, "Operation of Lithotomy."

8. Paper. Dr. Chas. Warrington Earle, "Cephalhæmatoma of the New-born."

9. Paper. Dr. Earle, "Disease of the Spleen and Report of a Fatal Case."

10. Discussion. "Sponge Grafting," Drs. Angear, Newton, Tagert and Patton.

11. Paper. Dr. H. M. Lyman, "Apoplexy."

12. Paper. Dr. G. Frank Lydston, "Some of the Fallacies of Modern Sanitation, with Especial Reference to the Sewage System in Relation to Zymotic Disease."

13. Paper. Dr. R. J. Curtiss, "The Disposal of Chicago Sewage."

14. Paper. Dr. J. D. Skeer, "Malignant Intestinal Obstruction."

15. Discussion, "Rectal Feeding," Drs. Robison, Van Buren, Skeer, Lyman, Angear

16. Paper. Dr. J. J. M. Angear, "Expectant Treatment."

17. Paper. Dr. E. L. Holmes, "Melanotic Sarcoma of the Eye, with Reports of Cases."

18. Discussion. "Therapeutics of Malarial Disease." Drs. Holmes, Avery, Haven, Root, Lagorio, Bucher, Angear.

19. Case Report, with specimen. Dr. E. P. Murdock, "Monstrosities."

20. Case Reports. Dr. J. D. Skeer, (*a*) "Impacted Fracture of the Neck of the Femur;" (*b*) "Case of Stricture of the Sigmoid Flexure of Colon."

21. Case Report. Dr. H. M. Lyman, "Circular Insanity."

Suggestions.—It is sometimes a matter of some difficulty to obtain papers or case reports from members for our meetings. Many are not active members, though attending occasionally. Nearly all are in active practice, are frequently obtaining post-mortems, and with but a minimum amount of trouble and time, and a trifle of enthusiasm, might afford the Society much valuable matter for discussion and general interest. Verbal reports from the more busy members would be highly appreciated, and the usefulness of the Society much increased. The general work of the year has been of a higher standard than before, and is getting more nearly upon a strictly pathological basis—all matters of medical, surgical and pathological interest still receiving equal attention, the majority of our members being busy in general practice. It would seem desirable that the present location be permanently occupied, as frequent changes reduce our attendance, and no better hall is at present obtainable in as central a location.

Respectfully submitted,

J. H. TEBBETTS, *Secretary*.

Treasurer's Report for the Year Ending April, 1884.—

DR.

To balance on hand May 14, 1883.....	$ 4 98
To annual dues collected	60 00
	$64 98

CR.

By bills paid, hall rent, stationery, printing, etc.....	$41 01
By cash on hand	23 97
	$64 98

J. H. TEBBETTS, *Treasurer*.

June 9, 1884—Park Institute.—The Society was called to order by the President, Dr. Angear.

The minutes of the last meeting were read and approved. Dr. E. A. Baldwin, 84 Park Avenue, Chicago, was unanimously elected to membership.

The Society then listened to the reading of a paper by Dr. G. Frank Lydston, entitled "The Prophylaxis of Puerperal Disease," an abstract of which is here omitted, as the paper is about to be printed in full.

The paper then being before the Society for discussion, Dr. J. D. Skeer thought it well to remember that parturition was a natural process, and fully agreed with the author of the paper that "let alone" treatment gave the best results; he would, of course, use disinfectants occasionally; considered that the danger from septic absorption to be much less than we have supposed.

Dr. Twining approved of the suggestion of guarding the patient's nervous system from shock and weariness, and of discriminating between true puerperal fever and the fever of nervous excitement merely. Have always had satisfaction in the use of vaginal injections of warm water, adding by preference chlorinated soda, but sometimes carbolic acid.

Dr. H. M. Lyman was interested in the paper, and thought it a timely one, much needed at the present time. We are at present on the wave of reaction against expectant treatment. In Paris, in the early part of this century, the student studied the natural history of disease, but the expectant plan was now a reaction in the opposite direction, not exactly toward polypharmacy, but over-active treatment.

In studying statistics of hospital administration, they seemed to be almost uniformly one sided; all facts on one side were marshalled, and those on the other unnoticed. This paper

was valuable on account of giving a fair statement of the other side. As Dr. Skeer remarked, parturition was merely a physiological process, as much so as urination or defecation ; and to interfere as we all do in various ways, seems as irrational and useless as meddling with the process of defecation.

As long as a woman is doing well, would let her alone; and his own experience coincides with Dr. Lydston's. Dreaded also the officious nurse; she is dangerous in the lying-in room. Cannot remember of having lost a case of puerperal fever in private practice, but passed through an epidemic of the fever when in Bellevue Hospital, under the old system.

Cases he would fear to handle the most are those of young women not long married, boarding in luxurious style, shut up in hot rooms without exercise; an unhealthy condition of the whole system results, making parturition almost an unnatural process, just as it is a truly natural one when the mode of living has been healthy. There may be sometimes a little fever, but when we consider the process of retrogressive metamorphosis in the uterus, it is no wonder the nervous system sometimes reacts.

In these cases, generally gives ten grains blue mass followed by a saline, and found matters relieved in twenty-four hours. True puerperal fever is uncommonly met with ; he had long believed that abscess in the breast was due to mild forms of blood poisoning ;—local pyæmia in point of least resistance. We ought not to impress on the patients that the puerperal status is a dangerous one. They will oppose nature and remain childless. Meddlesome midwifery was indeed the worst kind of midwifery.

Dr. Lyons then inquired of Dr. Lydston whether the best obstetricians were now using the binder in all cases, and was answered that among the French it is recently being omitted,

also, some are doing so in New York, but thought the majority, like himself, always applied a loose binder, and thought it as much a matter of policy as necessity. He would not like to condemn all injections, only perhaps those for prophylaxis. Cleanliness is essential, and for this use a vaginal injection once in twelve hours, of a quart of warm water, to which has been added a teaspoonful of compound tincture of iodine as a deodorizer and detergent, and especially good as an antiseptic and destroyer of bacteria. Also uses oakum to absorb all discharges; of advantage on account of cheapness and cleanliness.

Dr. McCullough stated that his experience has been to always use some antiseptic in the injections, and thought the patient required less attendance.

Dr. Landis, in reply to a general question of Dr. Lydston as to experience of members in cases of puerperal fever following illegitimate births, stated that he had had many cases of illegitimate labor, but never a case of puerperal fever among them. Never, in any case, uses prophylactic measures in private practice, and in hospitals thought interference did harm. He then related a case of labor complicated by erysipelas, mentioned by Dr. Lydston, and with recovery.

Dr. Angear had had a few cases of illegitimate labor, but they were followed by no nervous disturbance, and in one other case, where woman's husband had been killed just before labor, no puerperal disturbance occurred.

Present, fifteen members and several visitors.

The Society, on motion, adjourned.

J. H. TEBBETTS, *Secretary.*

July 14, 1884.—President Angear in the chair. Dr. Holmes presented the globe which had been removed from a boy 13

years of age. The walls had been perforated with a small knife from below the center of the cornea into the sclerotic through the iris and lens.

Four months after the injury the eye had so far recovered that its general appearance might lead one to believe all danger was past. The globe, however, was tender on gentle pressure. The other eye was suffering from intolerance of light and inability to read, but for a moment.

Bisection of the organ revealed a total detachment of the retina. Inflammation of the intraocular tissues had caused an exudation of a brownish serum between the choroid and retina, separating the latter throughout its whole extent from the choroid. As the vitreous humor became absorbed, the retina, by the increase of the fluid external to it, was pressed equally towards the anterio-posterior axis of the globe. The retina thus presented the form of a partially open umbrella—the apex of the cone being at the optic nerve disk, its base being near the periphery of the iris.

An eye in this condition might suffer at any time from an attack of inflammation, which would ruin the vision of the opposite side. Hence the extirpation seemed imperative.

Dr. Holmes also exhibited two typical specimens of sarcomatous tumor of the choroid. One was a very dark melanotic tumor, situated very near the iris—in fact, encroaching upon it—and could be easily diagnosticated in its early stages as a dark tumor. The patient, a female, 45 years of age, had observed a dimness of vision five months before the extirpation. Pain had been experienced only during the last three weeks.

The other tumor was located in the fundus, near the optic nerve disk, of a lady sixty-two years of age. The patient had suffered severe pain, with attacks of inflammation, during the sixteen weeks previous to the extirpation. At this time the

pupil was much dilated, the iris discolored, the lens opaque and the conjunctiva red. The fundus could not be examined by the ophthalmoscope. The tension was greatly increased. From the history of the case, it was diagnosticated as acute glaucoma, passing into a chronic form.

The examinations of the globe, however, revealed the tumor, a white-celled sarcoma, which was the cause of the secondary glaucomatous symptoms.

These two tumors are of a quite malignant character, and should always be extirpated with the whole globe as soon as discovered. Otherwise they are almost certain to invade, with rapidity, the tissues in and adjoining the orbit.

A Case of Nerve Stretching.— Dr. Lyons read the report of this case, prepared by Dr. Ristine, of Iowa.

A soldier, who had been wounded near the middle of the thigh, had suffered for a long period with great neuralgic pain. The operation was performed by Dr. Ristine on the sciatic and anterior crural nerves. The patient made a quite rapid recovery, and for more than four years, to the time of the report, had been free from pain.

A Case of Intussusception.— Dr. Skeer presented a pathological specimen, removed from the abdomen of an infant nearly six months of age, which had died with symptoms of obstruction, after an illness of eight days.

There had been great and constant pain from the commencement of the attack, with vomiting and slight tenesmus and tympanitis. The vomiting was not stercoraceous in character.

The specimen was somewhat remarkable in appearance. About an inch and a half of the ileum, nearly the whole of the cecum and appendix had passed into the colon and become constricted. The whole colon was reduced to the form of a small cord.

CHICAGO MEDICAL SOCIETY.

The regular semi-monthly meeting of this Society was held in Parlor 44, Grand Pacific Hotel, on Monday evening, September 15, at 8 o'clock. The President, Dr. D. A. K. Steele, in the chair. Dr. L. H. Montgomery, Secretary.

Dr. C. W. Earle read a brief paper on "Congenital Malformation of the Stomach," reciting the case of an infant that lived twelve days. Its life was sustained by very minute quantities of nourishment, he, during the time, being unable to diagnosticate the ailment. And it was only by permission of friends that an autopsy was made, when the trouble was ascertained. It consisted in there being no continuation from the stomach through the pylorus to the intestine, nor was there any communication whatever between the stomach and duodenum. The child's biliary secretion seemed healthy enough; and, as well as the meconium, was passed from the bowels.

The speaker also read a report of a case of bony tumor of the female pelvis and exhibited the specimens of both the above cases. The latter's weight was 3½ pounds. Both of which were believed to be rarely met with. They were accordingly, but informally, discussed.

The Secretary presented the following resolutions and moved their adoption:

WHEREAS, From present reports and indications in foreign countries, cholera and yellow fever (both pestilential diseases) prevail, and as the latter especially is always assuming a threatening attitude toward us, and is not conducive to our national prosperity, nor to public health, and should, if possible, be averted with earnest and efficient sanitary measures, and

WHEREAS, Cholera may make its appearance on this continent ere another twelve months shall elapse, and should, if possible, be averted or restricted to the narrowest limits, therefore,

Resolved, That it is the sense of the Chicago Medical Society to have that department of the government relating to public health, recognize the services of able sanitarians who constitute the National Board of Health, for the purpose of coöperating with municipal, State and other organizations of a similar kind, and that a committee of seven (7) members of this Society be appointed by the chair to draft suitable resolutions in behalf of said National Board.

Resolved, Furthermore, that this committee present said resolutions to the Congress of the United States, memorializing that body to make a sufficient appropriation for the purpose of said Board for scientific investigation in the prevention and restriction of epidemic, preventable and pestilential diseases.

We believe this action should be promptly taken at the coming session of our national legislature, and that a thorough sanitary organization of the nation should be recognized, and with it absolute enforcement of the best means for the protection of her citizens, and the improvement of our inter-state sanitary condition.

The mover of the resolutions stated that, inasmuch as they had been published on the postal card announcements, every officer and member of the Society, which consisted of about 276 members, had (he presumed) become familiar with the object aimed at in presenting them. He desired a full discussion, and to hear the views of each member present, if time permitted. If they are adopted, broad-minded, philanthropic men in official life will see their value when the first case of cholera appears on our borders, which we trust may never occur, but which is by no means impossible by next June. Then we will wish that a thorough vigilance and a more thorough organization had taken place. The time, therefore, for more effective measures to be taken, is now—months before the probable advent of the disease. It seems to him that the scientific, sanitary and commercial interests of the nation all demand the perpetuation of its National Board of

Health. The resolutions were promptly seconded by Drs. R. E. Starkweather and H. J. Reynolds, and after a lengthy discussion, which was participated in by many members, each of whom favored the object of the resolutions, the motion to adopt unanimously prevailed.

The President stated that he wished a little time to consider the appointment of so important a committee as is called for by the resolutions.

Dr. Edmund Andrews offered the following motion, which was duly seconded by Dr. C. E. Webster: "That this Society hereby express its thanks to Dr. Vincent L. Hurlbut for the gift of a very valuable collection of books and pamphlets, consisting of 300 volumes, to the Library Committee of the Society, for the Chicago Public Library." In behalf of the Library Committee, the speaker continued by stating that there are on the shelves of the city library 1,200 volumes for medical reference. The library authorities have bound, at their own expense, 75 volumes. The report was considered a flattering one, especially when the project to establish a medical department by this Society, to the Public Library, was inaugnrated so recently as last spring. The closing remarks of Dr. Andrews elicited a hearty and unanimous vote of thanks for Dr. Hurlbut.

The chair announced the following gentlemen to constitute the committee as provided for in the resolutions previously adopted: Dr. O. C. DeWolf, Dr. R. E. Starkweather, Dr. L. H. Montgomery, Dr. John Bartlett, Dr. J. H. Etheridge, Dr. A. R. Jackson, Dr. J. H. Hollister.

Dr. H. A. Johnson asked to be excused from serving on the committee, for the reason that he was the representative from Illinois on the National Board of Health, his resignation not having been accepted by the President of the United

States. He took pleasure in extending an invitation to the committee to call upon him at his home, and he would render to its members all the assistance he could, and impart any information he had received from his experience as a member of the National Board of Health. His library, also, was at the disposal of the committee.

Dr. J. H. Etheridge then moved that the committee be authorized to present their resolutions to the Society for a final consideration, and then submit them to Congress.

The motion was carried, and the Society adjourned.

Dr. D. A. K. Steele, President. The regular semi-monthly meeting of this Society was held at the Grand Pacific Hotel, on the evening of October 6th, 1884.

Dr. John Bartlett, Chairman of the Committee on National Sanitation, reported that while they had agreed on the substance of the proposed resolutions to be submitted for presentation to Congress, they were not in shape to report to the Society, although signed by most of the members. He therefore asked for further time to consider the matter, which was accorded.

Dr. John H. Rauch, Secretary of the Illinois State Board of Health, had read the resolutions prepared by the committee, and as he had been invited by one of its members to address the meeting on their importance, and that of national co-öperation with State and municipal governments in arresting the spread of epidemics, he said that matters should be so arranged that there would be concert of action in all municipal and State Boards with a national health organization; that the national government should have control of inter-state quarantine, he had no doubts. The trouble all arises out of

inefficient maritime quarantine. Illinois was specially interested in this, from the St. Lawrence river to the Rio Grande river, and from the Atlantic ocean to the Pacific ocean, for this State pays more internal revenue tax than any other State in the Union, New York not excepted. Cholera may arrive at Montreal or Quebec, and be brought to this city and State over the Grand Trunk railroad, the Michigan Central railroad, or Michigan Southern railroad, and we have authority to stop these trains at the State line only, and prevent them entering the State of Illinois. New York controlled that port exclusively, and Illinois had no authority to interfere, while her interest in keeping out diseases was just as great as that of New York. The Illinois Board of Health was prepared to prevent the entry of infectious and contagious diseases, no matter what contingency might arise, but it would be better if she could depend upon the aid of her sister States who were equally interested. Two-thirds of the number of emigrants coming to this country arrive at the port of New York. The emigrant inspection service carried on by the National Board of Health a few years ago, under the auspices of the national government, was done at a cost of only $50,000, when some forty odd thousand emigrants were vaccinated on the trains, and there was no detention. The National Board of Health no longer exists except in name, the last Congress having cut off all appropriations, consequently we are not in as good shape to ward off epidemics as we were three or four years ago. An endeavor to protect the States cannot be well done, on account of inefficient maritime quarantine, and the only resource we have at present to cope with these diseases is for the different States to act in good faith and compact with each other. An illustration was cited by the speaker to prove his statement correct, where, in 1878-79, along the banks of the Mississippi and Ohio rivers, epidemics prevailed; that since

the organization of the Sanitary Council of States along these rivers, infectious diseases and all other diseases are much less.

The speaker then recited the history of the National Board of Health, its origin, the inefficiency of our laws, etc., and cited as further illustration how inadequate the surgeon of this port and the one at Cairo would be to antagonize or cope with any form of epidemic; that instead of this being only under the control of the State, it should be controlled by the national government. Now is the time to prepare to secure legislation, instead of waiting until after the heels of an epidemic, as has been done heretofore. Those who have charge of sanitary interests in the different States should study the causes of disease, investigate the subject, and through thorough coöperation with a national health bureau we would be well prepared to prevent the advent of cholera next year. The machinery of no one man can be made to work or control the state of commerce satisfactorily, nor can this be done by one State alone; more States should be represented, and concert of action of all those in authority should prevail. The United States Treasury is entirely independent of States in this respect. A conference of the boards of health of the several States and Territories will be held at St. Louis next week, having for its object the coöperation of all authorities for the purpose of controlling epidemics and contagious diseases. He thought that some plan would be evolved that would prove more satisfactory to all, and do away with the petty jealousies that have hampered the action of the national health bureau. The general feeling prevails that we are going to have cholera in this country next year, and now is the time to prepare for it as the resolutions call for. Dr. J. H. Hollister said that as a member of the committee he should decline to attempt to instruct Congress as to its duties in the matter, but thought that a memorial presented by this Society would be

the better mode of expression. If our memorial to Congress is only to express a desire as to what is most wanted by the public, then we, as medical gentlemen, have done our part. It is a subject that takes hold of common interests, and how to render efficient aid suitably but not unnecessarily is something that requires more wisdom than can be gained by temporary discussion. He thought our wisest men should meet in conference and unite on some practical method and then urge legislative action. The speaker asked Dr. Rauch: to what extent are States moving in this direction of having State Boards of Health organized? and to what extent does their authority reach? He was answered, that Massachusetts, New Hampshire, Connecticut, New York, New Jersey, Maryland, West Virginia, Virginia, Indiana, Illinois, Michigan, Kentucky, Tennessee, Louisiana, Mississippi, Arkansas, Alabama, Iowa, Wisconsin, Minnesota and Missouri, each have their State Board of Health. Ohio, Pennsylvania, Maine and Vermont have no State Boards of Health. Lower Canada has none. But that the Ontario Board of Health is in good shape. The Michigan Board of Health is an advisory one. The Illinois Board of Health controls quarantine and can call on sheriffs and constables to obey her dictation. The boards of Missouri and Minnesota are nearly like ours, New York's board is partly like ours in authority. Indiana's board is nearly like ours, only better, for they have County Boards of Health. The Boards of Health of Maryland and Virginia are also very efficient. Dr. L. H. Motgomery alluded to the merits of the National Board of Health, to the efficient services it had rendered in the past, and hoped it would be adequately provided for in the future. He had spoken to the Representative in the Congressional district where he resides upon the subject, and was informed by the member that he would be glad to do his part and use his influence toward securing the granting of legislation

for the establishment of some form of a national sanitary organization. The speaker was also assured by the honorable gentleman that he had been, and at present is, a friend of the National Board of Health, for its services were performed with a degree of celerity and exactness that pleased everybody in the States. Regarding memorializing Congress, as Dr. Hollister alluded to, there is a clause in the resolution providing for this.

Every State and Territory in the Union should be represented on this board by the appointment of some one representative medical gentleman to it, for, as Dr. DeWolf said, inter-state observation. Indeed, we might do more, if needs be, than transmit a memorial to Congress; but petition, or appeal to our national legislators to appropriate sufficient means and appliances to sustain some form of National Health Association, which he believed is the sentiment of at least nine-tenths of the physicians and all the people.

Dr. R. E. Starkweather had hoped that the committee were prepared to submit their resolutions this evening. He, as one of its members, endorsed every word they contained, even at the risk of their being (as possibly they were in one place) tautological. He hoped the committee would be able to perfect them before the close of the week. Dr. Rauch, in conclusion, stated that he intended to speak to some extent upon this subject at the meeting of the State Boards of Health to be held at St. Louis next week. A special meeting will probably be held at Washington in December of all the State sanitary boards, at which time this subject will receive special attention. The Society tendered a vote of thanks to Dr. Rauch for his address and information given. The committee on resolutions was requested to meet immediately after the close of this meeting, which was then adjourned.

BOOKS RECEIVED.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Obstetrics, by A. F. A. King, M. D. Second edition. Henry C. Lea's Son & Co. Chicago: Jansen, McClurg & Co.

Elements of Pharmacy, Materia Medica and Therapeutics, by William White, M. D. Second edition. Henry Benshaw, London. Chicago: Jansen, McClurg & Co.

Clinical Lectures on Mental Diseases, by T. S. Clouston, M. D., with an abstract of the State and United States Laws relating to the custody of the insane, by C. F. Folsom, M. D. Henry C. Lea's Son & Co. Chicago: Jansen, McClurg & Co.

Diseases of the Throat and Nose, by Morel Mackenzie; vol. ii. P. Blakiston, Son & Co. Chicago: Jansen, McClurg & Co.

Practical Pathology; a Manual for Students and Practitioners, by G. Sims Woodhead, M. D. Henry C. Lea's Son & Co. Chicago: Jansen, McClurg & Co.

Materia Medica and Therapeutics, by J. Mitchell Bruce. Henry C. Lea's Son & Co. Chicago: Jansen, McClurg & Co.

An Introduction to Pathology and Morbid Anatomy, by T. Henry Green. Henry C. Lea's Son & Co. Chicago: Jansen, McClurg & Co.

Post Nasal Catarrh and Diseases of the Nose causing Deaf-

ness, by Edward Woakes, M. D. P. Blakiston, Son & Co. Chicago: W. T. Keener.

The Formation of Poisons by Micro-Organisms; a Biological Study of the Germ Theory of Disease, by G. V. Black, M. D., D. D. S. P. Blakiston, Son & Co. Chicago: W. T. Keener.

Diseases of the Heart and Thoracic Aorta, by Byron Bramwell, M. D., F. R. C. P. E. D. Appleton & Co. Chicago: Jansen, McClurg & Co.

Die Zuckerharnruhe mit einer ausfiührlichen Diätetik für Zuckerkrauke Von Unw. Med; Dr. Emerich Hertzka. Hans Feller, Carlsbad and Nice.

The Medical Graduate and His Needs, by George C. Wellner, M. D. Geo. S. Davis, Detroit.

The National Dispensatory, by Alfred Stille, M. D., L.L.D., and John M. Maisch, Phar. D. Henry C. Lea's Son & Co. Chicago: Jansen, McClurg & Co.

Phthisis Pulmonalis—How affected by the climate of Colorado, and what are proper cases to be sent there. L. H. Wood, M. D., Denver.

Fifth Annual Report of the Illinois State Board of Health. Springfield, 1883.

Sixteenth Annual Report of the President of the Inebriates' Home. Fort Hamilton, N. Y., 1883.

The Proceedings of the Naval Medical Society. Vol. ii, No. 1.

Public Health Laws of Illinois, and Sanitary Memoranda.

Excision of the Rectum for Cancer: Operation. Walter Coles, M. D.

Medical Communications of the Massachusetts Medical Society. Vol. xiii, No. 3. 1884.

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